MINISTRY OF FINANCE

Economic Survey

Winter 2019

Publications of the Ministry of Finance – 2019:70

Economic Prospects

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Economic Survey

Winter 2019

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Abstract

As the outlook for foreign trade is bleak, economic growth in the next few years will be sustained by domestic demand. Public consumption and investments will be of increasing importance to GDP growth, particularly in 2020.

The general government deficit will increase in 2020 when the additional spending foreseen in the Government Programme takes effect. In the absence of measures to improve the employment rate and productivity in the local and central government, general government finances will remain in the red for the next few years. The amount of debt in relation to GDP will again start to grow.

Finland's GDP is expected to increase by 1.6% in 2019. Residential construction investment will contract and the growth in productive investments will slow down. Private consumption will increase with improved employment and earnings. Export growth will accelerate as a result of increased service exports and ship deliveries.

GDP will grow by 1% in 2020. As service exports will continue to grow at a brisk pace, exports growth will outstrip export demand. Private consumption will continue to grow steadily. Household earnings will be sustained by increased incomes. Growing public consumption will increase domestic demand. Private investment is expected to fall next year as a result of shrinking residential investment.

The number of those employed will increase by 0.5% in 2020. Slowing economic growth and rising nominal wages will undermine employment growth. Nominal earnings are estimated to grow by 3%.

GDP will increase by 1.1% in 2021 and 1.2% in 2022. Sluggish economic growth combined with a faster increase in nominal wages will stop the growth in demand for labour in 2020 and 2021. The employment rate will rise to 73.6% by 2022 while the working-age population continues to shrink.

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Tiivistelmä
Kotimainen kysyntä ylläpitää talouskasvua tulevina vuosina, sillä ulkomaankaupan näkymät ovat heikohkot. Julkisen kulutuksen ja investointien merkitys BKT:n kasvulle korostuu varsinkin v. 2020.

Julkisen talouden alijäämä kasvaa v. 2020, kun hallitusohjelman mukaiset menolisäykset astuvat voimaan. Ilman työllisyyttä sekä talouden ja julkisen hallinnon tuottavuutta kohentavia toimia julkinen talous pysyy myös tulevina vuosina alijäämäisenä. Julkisen velkasuhteen lasku pysähtyy ja velka suhteessa BKT:hen kääntyy vähitellen uudelleen kasvuun.

Vuonna 2019 Suomen BKT:n ennustetaan kasvavan 1,6 %. Asuinrakennusinvestoinnit supistuvat ja tuotannollisten investointien kasvu hidastuu. Yksityisen kulutuksen kasvu jatkuu työllisyyden sekä ansiotason noustessa. Viennin kasvu kiihtyy palveluviennin ja laivatoimitusten seurauksena.

Vuonna 2020 BKT kasvaa 1 %. Palveluviennin kasvu jatkuu nopeanaja pitää viennin kasvun vientikysyntää nopeampana. Yksityisen kulutuksen kasvu jatkuu tasaisena. Kotitalouksien tulojen kasvua pitää yllä ansiotason nousu. Julkisen kulutuksen kasvun kiihtyminen nostaa kotimaisen kysynnän osuutta. Yksityisten investointien ennustetaan vähenevän ensi vuonna asuinrakennusinvestointien supistuessa.

Työllisten määrä nousee 0,5 % v. 2020. Talouskasvun hidastuminen ja nimellispalkkojen nousu heikentää työllisyyden kasvua. Nimellisansiotason arvioidaan nousevan 3 %.

Bruttokansantuote kasvaa 1,1 % v. 2021 ja 1,2 % v. 2022. Hitaahko talouskasvu ja kiihtyvä nimellispalkkojen nousu pysäyttävät työvoiman kysynnän kasvun vuosina 2020–2021. Työllisyysaste nousee 73,6 prosenttiin vuoteen 2022 mennessä työikäisen väestön edelleen vähentyessä.

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Sammanfattning

Den inhemska efterfrågan upprätthåller den ekonomiska tillväxten under de kommande åren eftersom utsikterna inom utrikeshandeln ser svaga ut. Den offentliga konsumtionens och de offentliga investeringars betydelse för BNP-tillväxten betonas framför allt år 2020.

Underskottet i de offentliga finanserna ökar år 2020 då utgiftsökningarna i regeringsprogrammet träder i kraft. Den offentliga ekonomin kommer att gå med underskott även under de kommande åren om man inte vidtar några nya åtgärder som främjar sysselsättningen och förbättrar produktiviteten inom den offentliga förvaltningen. Den offentliga skuldkvoten upphör att minska och skulden kommer så småningom att börja växa på nytt i förhållande till BNP.

Finlands BNP beräknas växa med 1,6 % år 2019. Investeringarna i bostäder minskar och ökningen av produktiva investeringar avtar. Den privata konsumtionen ökar ytterligare tack vare förbättringen av sysselsättningen och lönenivån. Exportökningen tilltar till följd av ökad serviceexport och fartygsleveranser.

BNP ökar med 1 % år 2020. Serviceexporten växer snabbt och exporttillväxten överskrider exportefterfrågan. Den privata konsumtionen ökar fortfarande jämnt. Höjningen av lönenivån upprätthåller ökningen av hushållens inkomster. Den inhemska efterfrågans andel utökas av att den offentliga konsumtionen ökar. De privata investeringarna beräknas minska nästa år i och med att bostadsinvesteringarna minskar.

Antalet sysselsatta höjs med 0,5 % år 2020. Sysselsättningsökningen försvagas av att den ekonomiska tillväxten avtar och att lönerna höjs. Den nominella lönenivån beräknas öka med 3 %.

BNP växer med 1,1 % år 2021 och 1,2 % år 2022. Den tämligen långsamma tillväxten och den tilltagande höjningen av de nominella lönerna leder till att efterfrågan på arbetskraft upphör att växa 2020-2021. Sysselsättningsgraden stiger till 73,6 % under år 2022 emedan befolkningen i arbetsför ålder fortsätter att minska.

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SYMBOLS AND CONVENTIONS USED

-	nil
0	less than half the final digit shown
..	not available
.	not pertinent
**	forecast
CPB	CPB Netherlands Bureau for Economic Policy Analysis
HWWI	Hamburgisches WeltWirtschafts Institut
IMF	International Monetary Fund
MoF	Ministry of Finance

Each of the figures presented in the tables has been rounded separately.

ECONOMIC SURVEY WINTER 2019

This Economic Survey offers projections of economic developments in 2019–2022. In addition to short-term prospects, it includes a medium-term economic outlook extending to 2024.

The forecast and trend projections in the survey are prepared independently by the Ministry of Fi-nance Economics Department based on the Act on the implementation of the Treaty on Stability, Coordination and Governance in the Economic and Monetary Union and on multi-annual budgetary frameworks (869/2012).

The forecasts are based on quarterly national accounts data published by Statistics Finland in November 2019 and on other public statistical sources available by 13 December 2019.

Helsinki December 2019

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Preface

The Ministry of Finance's recent revised numbers do not offer any major surprises. The baseline forecast has not changed much during the autumn. Economic growth will slow down to around one per cent in the next few years – without any sharp cyclical dip or other drama.

Internationally, Finnish products have continued to sell well this year, even though world trade is losing steam. However, due to the slack markets, export growth will slow down and, taking into account imports, foreign trade will not increase economic value added in the economy. The foggy outlook for the international economy will eat into corporate investment while construction will decline. But the number of those employed is growing and job security is not felt to be endangered to any significant extent. As collective bargaining is predicted to lead to pay increases, households will not be afraid of spending. In the next few years, the economy will be sustained by private consumption, and especially in 2020 by the Government's expansionary fiscal policy.

Indications of the future development of the economy have been closely monitored during the autumn. While no major changes in the business cycle are evident, the current trends confirm the impression that the Finnish economy is slowing down.

The accumulated data also suggests that the increase in the employment level has stagnated while employment is falling to its structural minimum. However, with the slowdown of the economy, it appears that the shortage of skilled labour is no longer growing.

What has changed during the autumn is that the range of risks around the baseline has narrowed.

The risk of a global recession is considered lower than previously. The US-China trade battle appears to have fallen into a rut. The loudest clamour about Brexit has calmed down. While Germany's prospects are still bleak, they have not at least deteriorated, and the French economy has grown surprisingly vigorously. Central banks are stimulating the economy by printing money. From this perspective, it is conceivable that the world economy will start to recover during the latter half of 2020.

Of course, the faintly positive mood in the global economy may turn sour just as quickly as it emerged. There is a definite risk of people being lulled into a false sense of security by the weak rays of light and starting to have an overly optimistic idea regarding the actual state of the labour market and public sector.

In the economic policy, eyes should remain firmly fixed on the structural prerequisites for economic growth that serve as the basis for increased wellbeing and sustainable public finances.

The challenges pending before us and the solutions are the same as ever.

As a result of ageing, a growing percentage of the population is leaving the ranks of the active workforce and the increase in the total amount of work in the economy is stalling. Productivity cannot be expected to improve faster in Finland than in other advanced countries. At the same time, the ageing population needs more and more social and health services.

As the need for these services increases sharply while economic growth slows down, public finances are threatened by a deteriorating financial imbalance, also known as the sustainability gap.

The Government's declared objective is to balance public revenue and spending in 2023. Attaining this objective would greatly improve the sustainability of public finances.

In the absence of reforms to improve employment and productivity in the local and central government and service production, this objective remains unattainable. The forecast prepared by the Ministry of Finance makes due allowance for the measures decided by Prime Minister Rinne's Government in the 2020 negotiations on the government budget and the General Government Fiscal Plan. According to the forecast, general government finances will show a deficit of 1.2% relative to GDP in 2023.

An increase in employment would require a stronger-than-forecast total demand as well as measures that support productivity and cost competitiveness of the Finnish industry and increase demand for labour.

As it is, the foreseen health and social services reform determines the latitude for improving productivity in service production in the public sector.

The core objective of the economic policy is to make more efficient use of the resources available. No other solution exists to the problems of public finances.

Summary

Economic outlook for 2019–2022

As the outlook for foreign trade is bleak, economic growth in the next few years will be sustained by domestic demand. Private consumption will continue to grow at a steady pace as the real purchasing power of households holds up. Growth in private investment will slow down as a result of the sluggish business cycle in construction as external uncertainties are reflected in business expectations both at home and abroad. Public consumption and investments will be of increasing importance to GDP growth, particularly in 2020.

In the medium term in 2023 and 2024, economic growth will peter out to less than one per cent due to structural circumstances. As a result of slower economic growth, employment will improve only slightly.

The general government deficit will increase in 2020 when the additional spending foreseen in the Government Programme takes effect. In the absence of measures to improve the employment rate and productivity in the local and central government, general government finances will remain in the red for the next few years. The amount of debt in relation to GDP will again start to grow.

Word trade will recover slowly

The global economy remains uncertain, although there are some signs of stabilisation. However, the recovery of the world economy will be very slow as of 2020.

The outlook for the euro area is overshadowed by the vulnerable German industry. Industry survey indicators are quite low, although the trend has levelled off slightly towards the end of 2019. Economic growth in the euro area will accelerate from 1% in 2019 to about 1.5% towards the end of the period covered by the forecast.

U.S. economic growth will slow down somewhat over the forecast horizon. Unemployment will be extremely low and consumer confidence is currently high, even if the greatest growth potential is already behind us. The risks associated with the Chinese economy continue to grow and overshadow the prospects for growth. For structural reasons, economic growth will slow down towards the end of the forecast period.

World trade growth will be very weak in 2019 due to trade conflicts, cyclical reasons and the ongoing restructuring of the automotive industry. World trade will recover in the next few years as the economic outlook improves.

Both short-term market rates and government long-term interest rates have risen modestly in recent months, possibly reflecting the nascent stabilisation of financial markets. Interest rates, both short-term market rates and government bonds, are expected to rise towards the end of the forecast period.

Slower times ahead

Finland's GDP is expected to increase by 1.6% in 2019. Residential construction investment will contract and the growth in productive investments will slow down as the global business cycle enters a downward phase. Private consumption will increase as a result of improved employment and increased earnings. Export growth will accelerate as a result of increased service exports and ship deliveries.

Employment picked up again in the autumn of 2019, following a weaker employment trend in the beginning of the year. The number of employed persons is estimated to increase by one per cent in 2019, with the average annual employment rate reaching 72.6 per cent.

In 2020, economic growth will slow down to one per cent. The outlook for the export market will weaken and export growth will slow down, but it will still remain at the average levels achieved in recent years. Service exports will continue to grow faster than goods exports, which means that export growth will outstrip export demand.

The increase in export prices will be slower than the increase in import prices throughout the forecast period and the exchange ratio will gradually decline at a controlled pace. The balance of trade will show a deficit towards the end of the period covered by the forecast. The current account deficit will also grow, as the balances of services, factor compensation and current transfers remain unchanged relative to GDP.

Private consumption will continue to grow steadily. As the increase in disposable household income will be maintained by rising earnings and sustained employment, the wage bill will swell quickly. Households' real disposable income will continue to grow steadily because inflation will remain moderate. Growing public consumption will increase domestic demand.

Private investment is expected to fall next year. Residential construction investment, in particular, will decline. Investments in public service buildings will increase. Service industries will sustain investments in machinery, equipment and means of transport. Research and development expenditure is expected to increase at a satisfying rate.

The number of those employed will increase by 0.5% in 2020. Slowing economic growth and rising nominal wages will undermine employment growth. Pushing the unemployment rate down to the level prevailing during the boom prior to the financial crisis will increase tensions in the labour market, which in turn will intensify wage pressures. Unemployment continues to fall, albeit slowly. Driven by improved employment, the number of unemployed persons will decrease and the unemployment rate will fall to 6.5 per cent.

The pay increases to be determined in collective bargaining in 2020 are expected to exceed those agreed upon in 2019. With average wage drifts, nominal earnings are estimated to grow by 3%. As a result of improved employment, the total wage bill is assumed to increase by 3.5% next year.

The inflation predicted for 2020 is 1.3%. Given increased earnings, the prices of services are expected to rise faster than last year. The effect of commodity prices on inflation will be clearly negative, with the result that core inflation will continue to remain at a mere one per cent. Increased indirect taxes will accelerate inflation by 0.1 percentage points.

GDP will increase by 1.1% in 2021 and 1.2% in 2022. Growth will be aided by an upturn in productive investment, supported by major projects and R&D investment. Similarly, the fall in residential construction investment is predicted to stop in 2022, which will support GDP growth. The ratio of private investment to GDP will fall from the current level by less than half a percentage point to settle at around 19% in 2022.

World trade will pick up and exports increase at an accelerating rate towards the end of the forecast period. The brighter outlook for export demand is due to improved economic performance by Finland's key European export markets, the emerging economies and the United States.

The growth in private consumption will slow down towards the end of the period. Despite rising incomes, the increase in the wage bill will decelerate. Moreover, the gradually accelerating inflation will eat into the growth of real disposable household income. Households are also expected to gradually increase their savings, which will curtail private consumption. However, the savings ratio will remain low even at the end of the forecast period.

Inflationary pressures are expected to build up slowly in the coming years. Rising indirect taxes will accelerate inflation by 0.3 percentage points in 2021. Gradually, increased earnings are expected to be reflected in prices more broadly, and consumer demand will grow steadily.

Sluggish economic growth combined with a faster increase in nominal wages will stop the growth in demand for labour in 2020 and 2021. The employment rate will rise to 73.6% by 2022 while the working-age population continues to shrink. As unemployment continues to fall and the mismatch between the supply of and the demand for labour force increases, the rate of growth in earnings is expected to approach the annual rate of three per cent, the average for the past 19 years.

The deficit in general government finances will grow

Decelerating economic growth combined with the additional spending envisaged in the Government Programme will increase the deficit in general government finances in 2020. At the same time, the tax hikes scheduled for 2020-2023 will gradually increase tax revenue during the Government term. General government finances will show a clear deficit throughout the Government term. To balance public finances, it will be necessary to determine, in greater detail, the measures foreseen in the Government Programme in order to boost employment and productivity in the public sector and administration, and ensure effective implementation.

The deficit in local government finances is growing to historic proportions and will – in the absence of measures to underpin municipal finances – remain massive for the next few years. Local government finances are undermined by the increase in social and health care costs due to the ageing population as well as extensive investment needs. The increasingly bleak financial prospects facing local governments underline the urgency of the health and social services reform.

Public debt relative to GDP has declined in recent years. The falling trend in the debt ratio will be reversed in 2020 when it will start to rise gradually. There is a risk that the debt ratio will exceed 60 per cent in the early 2020s.

Risks to economic development

The forecast foresees primarily downside risks. However, the risks have been somewhat alleviated in the past few months. An escalation of the trade conflict remains the key risk overshadowing the outlook for world economy. The significance and causal chains of trade conflicts are discussed in the box entitled 'Effects of the world trade scenarios'. The risk of a recession following a decline in industrial production is still significant in Europe.

An earlier-than-expected resolution of the US-China trade conflict would be a major positive risk to the baseline outlook for the global economy.

Uncertainties affecting exports arise from the performance of the international trading system, among other things. Trade tensions between major economies are reflected in world trade, and the indirect effects on Finnish exports may be more extensive than anticipated. An increase in unit labour costs may have unfavourable implications for exports during the forecast period if the rise in costs in Finland proves faster than in competitor countries.

The biggest single short-term risk foreseen in the investment forecast is the faster-than-predicted fall in residential construction investment. In the long term, the significance of major projects as a risk factor will grow. In the absence of decisions on said major project, economic development will be much weaker. If more major projects were to be launched than foreseen in the forecast, the investment forecast would be too modest.

Table 1. Key forecast figures

	2018	2017	2018	2019**	2020**	2021**	2022**
	EUR bn	change in volume, %					
GDP at market prices	234	3.1	1.7	1.6	1.0	1.1	1.2
Imports	92	4.1	5.0	3.1	2.0	1.9	2.1
Total supply	**326**	**3.3**	**2.6**	**2.1**	**1.3**	**1.3**	**1.5**
Exports	91	8.8	2.2	4.0	1.9	1.9	2.0
Consumption	177	0.7	1.7	1.5	1.6	1.2	1.2
private	124	1.0	1.8	1.4	1.5	1.7	1.5
public	53	0.2	1.5	1.5	1.8	0.1	0.6
Investment	56	4.0	3.3	0.3	-0.3	0.9	1.5
private	46	4.8	2.9	0.2	-0.9	1.3	2.2
public	10	0.2	5.5	0.9	2.8	-0.7	-1.7
Total demand	**326**	**3.4**	**2.6**	**2.2**	**1.5**	**1.5**	**1.6**
domestic demand	235	1.6	2.7	1.6	1.3	1.3	1.5

Table 2. Other key forecast figures

	2017	2018	2019**	2020**	2021**	2022**
GDP, EUR bn	226	234	242	249	257	265
Services, change in volume, %	2.4	1.8	1.6	0.8	1.1	1.1
Industry, change in volume, %	8.4	0.1	3.5	1.4	1.5	1.8
Labour productivity, change, %	2.8	-0.9	1.1	0.5	0.8	1.2
Employed labour force, change, %	1.0	2.7	1.0	0.5	0.3	0.0
Employment rate, %	69.6	71.7	72.6	73.1	73.5	73.6
Unemployment rate, %	8.6	7.4	6.7	6.5	6.4	6.4
Consumer price index, change, %	0.7	1.1	1.1	1.3	1.6	1.6
Index of wage and salary earnings, change, %	0.2	1.7	2.5	3.0	2.8	2.8
Current account, EUR bn	-1.7	-3.2	-2.9	-3.3	-3.5	-3.7
Current account, relative to GDP, %	-0.8	-1.4	-1.2	-1.3	-1.4	-1.4
Short-term interest rates (3-month Euribor), %	-0.3	-0.3	-0.4	-0.4	-0.3	-0.1
Long-term interest rates (10-year govt. bonds), %	0.5	0.7	0.1	-0.1	-0.1	0.2
General government expenditure, relative to GDP, %	53.7	53.1	52.7	53.0	52.7	52.4
Tax ratio, relative to GDP, %	43.0	42.3	41.8	42.0	41.9	41.8
General government net lending, relative to GDP, %	-0.7	-0.8	-1.0	-1.4	-1.4	-1.3
Central government net lending, relative to GDP, %	-1.8	-1.2	-0.9	-1.4	-1.2	-1.0
General government gross debt, relative to GDP, %	60.9	59.0	58.5	58.8	59.7	60.4
Central government debt, relative to GDP, %	46.8	44.8	43.9	43.6	44.0	44.3

Medium-term outlook for 2023 and 2024

Last year Finland's GDP grew by 1.7%. The projected growth for 2019 is 1.6% From 2020 to 2022, growth will continue at a moderate rate at a little over one per cent[1]. In the medium term, in 2023 and 2024, economic growth is expected to abate slowly but stay at a level close to one per cent1. In historical terms, the growth foreseen for the medium term will be slow due to structural factors affecting the economy.

The growth in the labour input will boost potential output growth in the current year and, to some extent, in the next two years. After this, there will be a gradual

1 Medium-term prospects can be assessed by means of potential output which is assumed to determine the necessary preconditions for growth. The Ministry of Finance uses the production function method, developed jointly by the EU Commission and the Member States, to estimate potential output, in which the growth in potential output is divided into estimates of the development of potential labour input, capital and total productivity. The potential output and output gap are unobservable variables, the estimation of which is subject to uncertainty, especially in times of strong economic cycles and rapid changes in the structure of production.

reduction in labour input because the improvement in the level of participation will stop and no longer compensate for the fall in the working-age population.

Aside from labour input, the production conditions in an economy are affected by capital stock. The low level of investment that has beset the economy for a few years as a result of weak economic performance slowed down the growth of capital stock, thereby undermining the growth potential of the economy. However, the recovery in the level of investment since the weakest years has improved the situation to some extent, and investments will increase potential output in the medium term by about half a per cent per year thanks to the growth of capital stock.

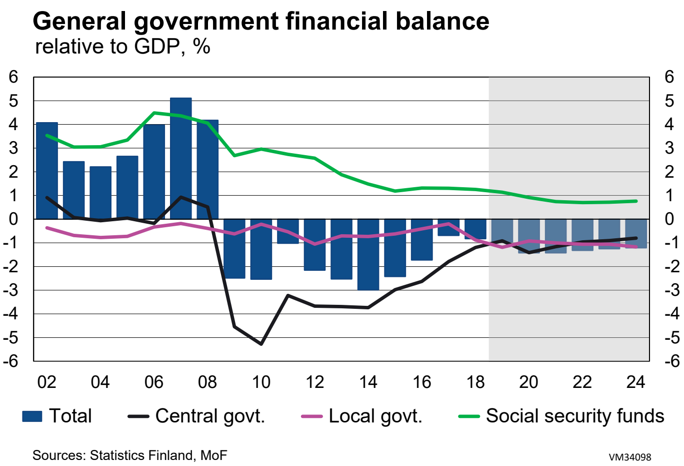
A third source of potential output is total factor productivity. While total factor productivity has improved in recent years, it still remains low in the historical perspective. Slow growth is explained by economic restructuring. The output of high-productivity sectors has declined and services have become more predominant in the overall structure of the economy. The total factor productivity growth trend is expected to fall short of one per cent in the medium term, when in the early 2000s average growth reached over two per cent. Nevertheless, the predicted total factor productivity growth trend will exceed the annual average over the past ten years.

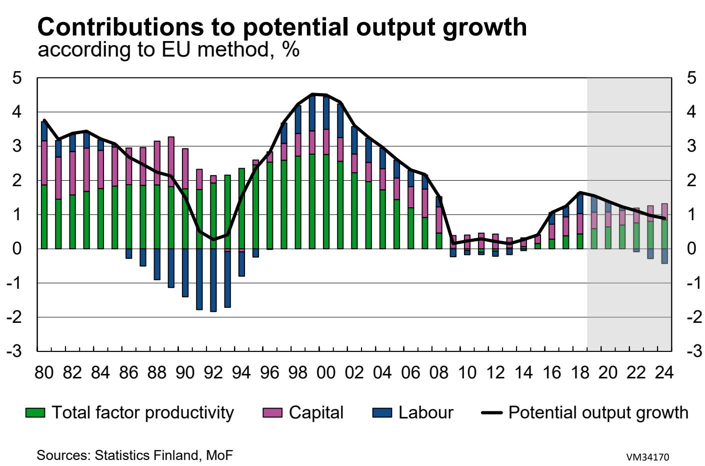
Finland's negative output gap is assumed to have been closed in 2017. Since then, actual and predicted economic growth have followed the growth in potential output very closely. Between 2020 and 2024, both will grow at an average annual rate of 1.1%. Hence, the output gap is not expected to depart from zero by any significant amount over said period. The output gap will turn from slightly positive in 2019 into slightly negative in 2020 and 2021 and be closed in the medium term.

Table 3. Key forecast figures for the medium term

	2018	2019**	2020**	2021**	2022**	2023**	2024**
GDP at market prices, change in volume, %	1.7	1.6	1.0	1.1	1.2	1.0	0.9
GDP, EUR bn	234	242	249	257	265	273	281
Consumer price index, change, %	1.1	1.1	1.3	1.6	1.6	1.6	1.7
Unemployment rate, %	7.4	6.7	6.5	6.4	6.4	6.6	6.8
Employment rate, %	71.7	72.6	73.1	73.5	73.6	73.4	73.2
General government net lending, relative to GDP, %	-0.8	-1.0	-1.4	-1.4	-1.3	-1.2	-1.2
Central government	-1.2	-0.9	-1.4	-1.2	-1.0	-0.9	-0.8
Local government	-0.9	-1.2	-0.9	-1.0	-1.1	-1.1	-1.2
Social security funds	1.3	1.1	0.9	0.7	0.7	0.7	0.8
Structural balance, relative to GDP, %	-0.9	-1.2	-1.4	-1.3	-1.3	-1.3	-1.2
General government gross debt, relative to GDP, %	59.0	58.5	58.8	59.7	60.4	61.2	61.9
Central government debt, relative to GDP, %	44.8	43.9	43.6	44.0	44.3	44.6	44.6
Output gap, % of potential output[1]	0.2	0.3	-0.1	-0.2	-0.0	0.0	-0.0

[1] Estimated according the method developed jointly by the EU Commission and Member States





BOX: OVERVIEW OF CROSS-BORDER EFFECTS OF CLIMATE CHANGE

The World Meteorological Organization (WMO) expects extreme weather conditions to become more common. Weather and climate risks are unevenly distributed across the world and the countries' capacity to respond to these risks varies considerably. While it is expected that the impacts of climate change affecting Finland will be average by international standards and Finland's capability to adapt to the changes are high, global changes are transmitted to Finland through various causal chains. Such transnational effects affecting Finland are known as cross-border impacts, which will be discussed here in terms of price-related problems with the availability of imported products and industrial raw materials on the macro economy. As far as impacts are concerned, the shock undermines the economy in the short run, because employment and investments remain below the equilibrium level for several quarters, while private consumption falls after an initial, short-lived boost.

A report released in 2018 by the European Environment Agency examines the assessments of climate change impacts, vulnerabilities and risks prepared by the Member States. While most Member States have carried out national analyses of said impacts and vulnerabilities, the scope of the assessments vary considerably from one country to another. The most extensive national assessments focus on effects and risks related to forestry, energy and biodiversity. Only five out of twenty-five countries have studied cross-border impacts. Even so, cross-border effects were generally considered to be among the most important areas that required a closer impact assessment in support of adaptation measures.

In Finland, Hildén et al. (2016) have carried out a comprehensive assessment of the cross-border impacts of climate change. According to the study, international weather and climate risks, if realised, may affect Finland through causal chains related to international trade, transport infrastructure, finance and migration, to name a few. In terms of impacts, such changes may undermine or strengthen the Finnish economy. Extreme weather phenomena, such as heavy rains, drought, hot spells or extreme cold may lead to unexpected fluctuations in the availability and price of production inputs, raw materials and other imported goods needed by the Finnish industry. At the same time, climate change may offer competitive advantages and increase demand for Finnish products.

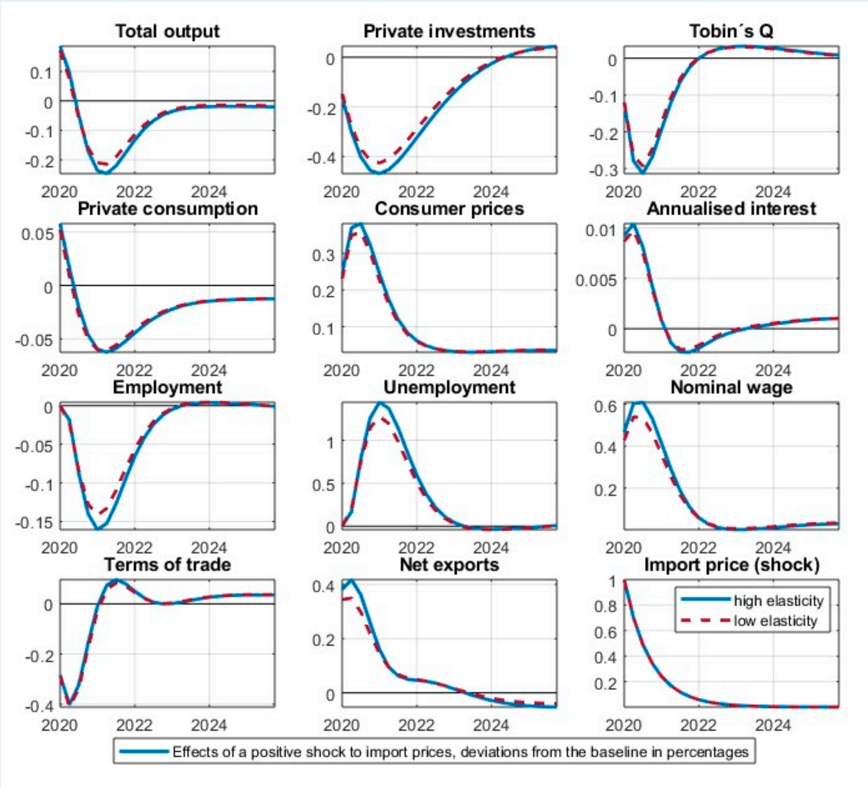
The significance of cross-border impacts is intensified by close ties with global markets. The openness of an economy can be measured, for instance, by the size of exports and imports as a percentage of GDP. In 2018, the figure for Finland was 79 %, whereas the EU average was 87 % and the latest 2017 figure for OECD countries 57 %. Finland's main trading partners are Germany, Sweden, the UK, the United States, China and, particularly in exports, Russia. Many of Finland's biggest trading partners are countries whose ability to adapt to climate change and extreme weather conditions is high. This will alleviate the trade risks associated with cross-border impacts. Because of the global trade links, the concentration of production and the extension of value chains, it is imperative to analyse weather and climate risks and assess adaptation measures.

The present calculation examines the effects of unforeseen shocks affecting import prices on the Finnish economy. A shock refers to a situation in which problems in the availability of an imported capital good affects its price. It is used as a vehicle for illustrating the international trade channel described in the study by Hildén et al. (2016) and Benzie et al. (2019) by which cross-border climate change impacts are transmitted. The calculation is made using the macro model (Kooma) applied by the Economics Department of the Ministry of Finance. It examines an increase of 1 percentage point in the prices of imported products used for domestic production during the first quarter of 2020. The calculation describes a short-lived disruption and the impact on import prices is expected to be halved in six months.

The results are reported with reference to an equilibrium model, in this case the economic forecast prepared by the Economics Department of the Ministry of Finance and presented in this publication. The calculation results should be interpreted as the ceiling for the fluctuations caused by the shock, because the model makes no distinction between sectors vulnerable and non-vulnerable to climate change. For example, a change in the ratio between service and goods imports may mitigate the shock effects. As far as substitution effects are concerned, the model makes allowances for the possibility that imported capital goods are replaced by domestic ones. The calculations have been prepared at two substitution elasticity levels: the low level elasticity parameters are close to 1 while the high elasticity parameters are 1.22 for consumer goods and 2.55 for investment goods. When substitution elasticity is low, the imported commodity is less susceptible to price changes. This somewhat mitigates the shock effect on the analysed variables.

The shock described above benefits domestic production, if foreign capital goods are replaced by domestic ones or if the shock increases foreign demand for Finnish exports. In the calculation, the volume of production initially increases to quickly fall below the equilibrium level in the second quarter. Private investments decrease when the profitability of investments falls as determined by Tobin's Q ratio. By contrast, export prices increase as a result of the shock, but the increase is more moderate than in import prices, which decreases the trade ratio. Net exports will remain above the equilibrium level for several years. The effects of the shock which increase import prices are transmitted to other domestic prices and wages, even if there is a delay in price and wage adaptation. Since domestic companies use both domestic and foreign commodities in production, the prices of consumer products increase and domestic consumption remains under the equilibrium level up to the end of the analysis period despite the initial increase.

Figure: Cross-border effects of climate change



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World Bank, World development indicators, Trade (% of GDP)

1 Economic outlook

1.1 Global economy

Global economic prospects remain uncertain despite some signs of stabilisation

The global economy remains uncertain, although there are some signs of stabilisation. Long-term interest rates have risen slightly and some leading indicators point to better developments in the near future. However, the recovery of the world economy will be very slow as of 2020. World trade growth has been very weak in 2019 due to trade conflicts, cyclical reasons and the ongoing restructuring of the automotive industry. World trade will recover in the next few years as the economic outlook improves.

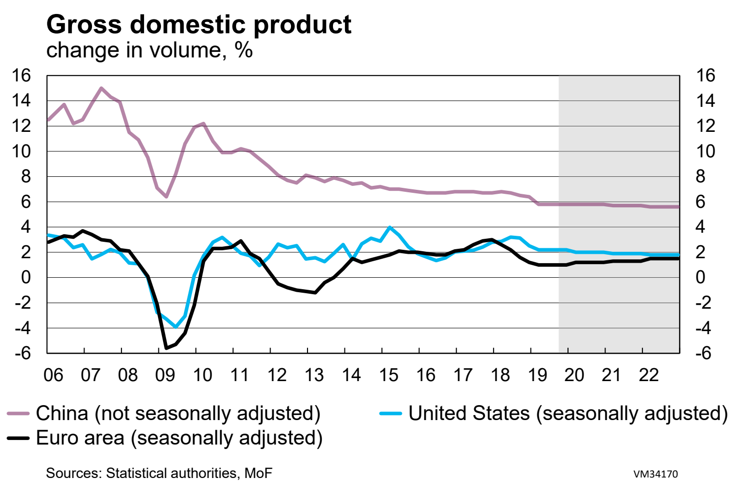
US economic growth will slow down somewhat over the forecast horizon, largely as a result of the business cycle. Economic prospects will be overshadowed by the trade conflict with China and political uncertainty. Unemployment is extremely low and consumer confidence is currently high. Due to these factors, private consumption will sustain economic growth. The contribution by net export is negative because of the uncertainty of foreign trade. However, towards the end of the year, there appears to have been an increase in new export orders secured by industry. Economic growth over the next few years will remain slightly below two per cent.

The outlook for the euro area is overshadowed by the vulnerable German industry. A key factor is the largely structural problems besetting the automotive industry. Radical Crucial changes are taking place in the demand for cars. Industry survey indicators are quite low, although the trend has levelled off slightly towards the end of 2019. France's prospects are slightly better. The Purchasing Managers' Indices for industry and services suggest that the situation is improving. Italy is emerging from the recession and the Spanish economy is growing at a reasonably fast rate. Economic growth in the euro area will accelerate from 1% in 2019 to about 1.2% in 2020 and 1.3% in 2021. In 2022, growth will exceed 1.5%.

Uncertainty in the UK will persist, and the mood in the economy is gloomy. However, economic growth increased by 0.3 per cent relative to the previous quarter. While Brexit is still overshadowing the economic outlook, the risk of a no-deal exit appears to have diminished towards the end of the year. The pound has appreciated relative to other currencies, which suggests steadier development. Economic growth will most likely remain under 1.5% during the forecast period.

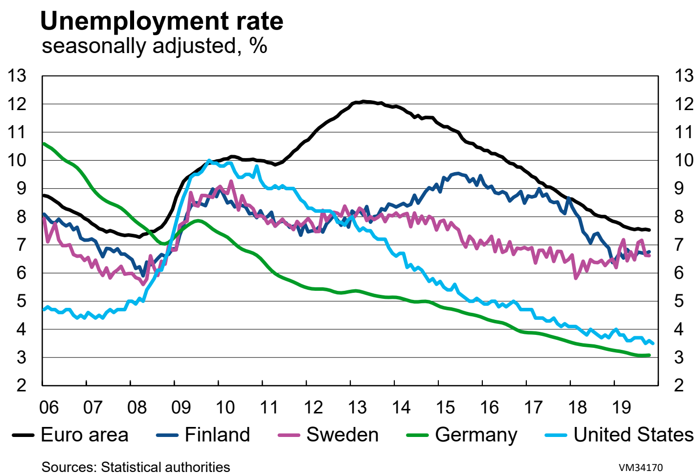
The Swedish economy has weakened during the current year. Growth has clearly slowed down compared with 2018. Currently, it is sustained mostly by net exports and the weak Krona while private consumption remains modest. The Purchasing Managers' Index has fallen considerably since 2018. The economy will grow by 1.2 per cent this year and by 1.7-1.8 per cent during the forecast period, driven by exports.

Russia's economic growth has been modest, mainly due to structural problems. The efforts to expand the industrial structure have not been as successful enoughas hoped for. On the positive side, inflation has slowed down and the Russian rouble stabilised to some extent during 2019. Additionally, the prospects for the extractive industry have improved towards the end of the year. Over the next few years, the economy will grow at a rate of slightly over one per cent.



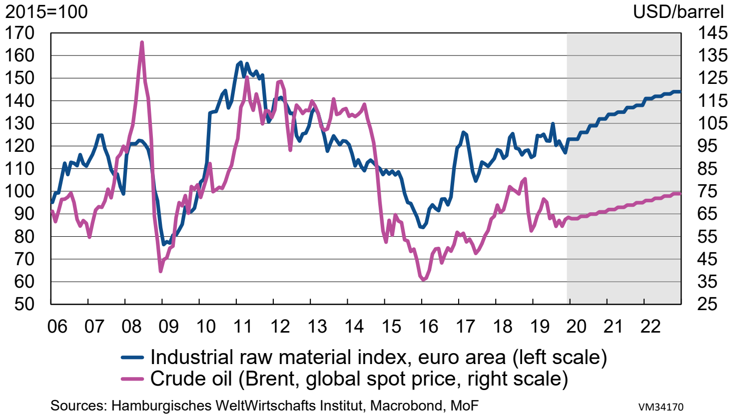
The risks associated with the Chinese economy continue to grow and overshadow the prospects for growth. In particular, the growing indebtedness of companies and households, as well as doubts about the stability of financial markets, create concerns. The trade conflict with the United States stifledharmed exports. By contrast, the Purchasing Managers' Index for industry suggests brighter prospects. For structural reasons, economic growth will slow down to slightly over 5.5 per cent towards the end of the forecast period.

In Japan, economic growth decreased quickly in the third quarter of the current year. At the same time, consumer confidence eroded. This may be related to the increase in sales tax implemented in October, the effects of which the Government seeks to attenuate by expansionary fiscal policies. The modest dynamics of the economy are illustrated by the extremely low inflation rate. Most likely, eEconomic growth will remain at 0.7-0.8 per cent over the next few years.



In the energy market, the situation has remained calm despite the tensions in the Middle East. Movements in the price of crude oil have been moderate. Price pressures are alleviated by the high level of shale oil production in the United States. There has not been any increase in the price of natural gas typical of the end of the year. Similarly, industrial raw material prices have remained moderate.

Raw material prices



Sources: Hamburgisches WeltWirtschafts Institut, Macrobond, MoF

Both short-term market rates and government long-term interest rates have risen modestly in recent months, possibly reflecting the nascent stabilisation of financial markets. However, interest rates on government bonds have remained mostly negative, a sign of investor caution and the unorthodox monetary policies pursued by the key economies.

World trade to recover slowly from uncertainty

World trade is facing great uncertainties in the year under review. Since the summer, world trade in goods has declined compared to the previous year. This development is largely due to trade conflicts as well as economic trends. World trade is, however, expected to recover from next year onwards with the modest upturn in global production. There is also reason for cautious optimism that the ongoing trade conflicts might ease.

The risks to economic prospects have stabilised

While the risks affecting the overall prospects discussed above remain negative, they have stabilised to a degree. The situation in trade conflicts fluctuates and the possibility of them escalating cannot be ruled out. The risk of a no-deal Brexit appears lower than before. The situation in Hong Kong and its potential present a major geopolitical risk that may reflect on the Asian and global economy.

Positive risks include the easing of trade conflicts and the stronger signals of stabilisation in the global economy.

Table 4. Gross domestic product

	2017	2018	2019**	2020**	2021**	2022**
	change in volume, %					
World (PPP)	3.7	3.6	2.9	3.0	3.1	3.2
Euro area	2.7	1.9	1.0	1.2	1.3	1.5
EU	2.5	1.9	1.1	1.3	1.3	1.4
Germany	2.8	1.5	0.5	1.0	1.2	1.5
France	2.4	1.7	1.3	1.3	1.3	1.5
Sweden	2.7	2.4	1.2	1.7	1.8	1.8
United Kingdom	1.9	1.4	1.3	1.3	1.3	1.4
United States	2.4	2.9	2.2	2.0	1.9	1.8
Japan	1.9	0.8	0.9	0.7	0.7	0.8
China	6.8	6.6	5.8	5.8	5.7	5.6
India[1]	7.2	6.8	5.8	6.4	6.8	6.9
Russia	1.6	2.3	1.1	1.2	1.2	1.3

[1] Fiscal year

Sources: Eurostat, statistical authorities, IMF, World Bank, MoF

Table 5. Background assumptions

	2017	2018	2019**	2020**	2021**	2022**
World trade growth, %	5.2	3.8	0.1	1.3	1.9	2.3
USD/EUR	1.13	1.18	1.12	1.10	1.10	1.10
Industrial raw material price index, EA, € (2015=100)	114.5	118.5	122.0	128.0	136.0	143.0
Crude oil (Brent), $/barrel	54.8	71.6	64.0	64.4	68.4	72.4
3-month Euribor, %	-0.3	-0.3	-0.4	-0.4	-0.3	-0.1
Government bonds (10-year), %	0.5	0.7	0.1	-0.1	-0.1	0.2
Export market share (2010=100)[1]	95.0	93.0	97.0	98.0	98.0	97.0
Import prices, %	3.8	3.3	0.8	1.6	1.7	1.9

1 Ratio of export growth to world trade growth

Sources: Statistical authorities, CPB, HWWI, Reuters, MoF

BOX: EFFECTS OF WORLD TRADE SCENARIOS

Estimates of the effects of a trade war on the global GDP have been made, inter alia, by the Bank of Finland, (Ikonen and Vilmi 2019), Banque de France (Berthou et al. 2018) and The Bureau for Economic Policy Analysis CPB of the Netherlands (Bollen and Rojas-Romagosa 2018). Underlying these studies are the trade policy measures taken by the United States in early 2018 and the subsequent countermeasures. The estimate includes scenarios illustrating the escalation of the various trade policy measures.

The findings of the studies are consistent. According to Ikonen and Vilmi (2019) and Berthou et al. (2018), the escalation of the trade war into a global conflict would reduce the total world output by 2.5–3%. Bollen and Rojas-Romagosa (2018) say that equivalent impacts on total output would be 2% for the EU, 3% for the United States and 4% for China.

World trade in relation to the world economy

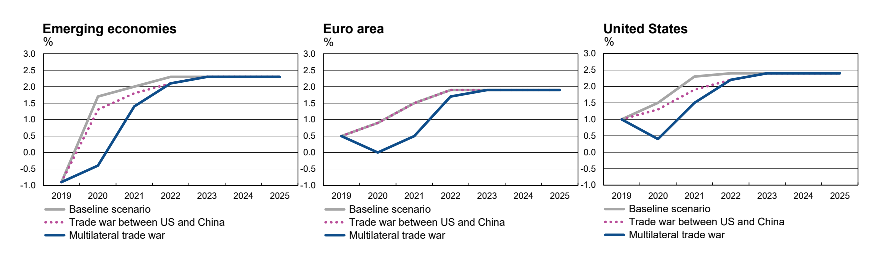
The growth of world trade in proportion to global GDP has varied over time. The recent debates on elasticity have focused on changes in value chains, total demand and trade structures. Cyclical demand patterns also play a role beside structural factors. The contraction of world trade has been explained by a shift in the relative percentages of GDP and trade in favour of the emerging economies that engage in trade less extensively, the change in demand away from import-intensive exports and the decelerating integration of global value chains (Martinez-Martin 2016, Wozniak and Galar 2018). Additionally, structural changes in China, raw material prices and the slower pace in dismantling the barriers to multilateral trade are reflected on elasticity (Martinez-Martin 2016).

Elasticity estimates range from 0.8 to 1.8 and vary considerably if we look at individual episodes (ECB 2014, Auboin and Borino 2017, Wozniak and Galar 2018). Moreover, income elasticities vary from one commodity and service category to another. In scenario calculations, income elasticity in goods imports is assumed, in the forecast period, to be 1.1, which is low considering historical development but consistent with more recent developments (cf. ECB 2014, Borin et al. 2017).

Effects of the scenarios on world trade

We have calculated scenario paths illustrating the development of world trade using the estimated impacts on GDP presented in the literature as well as income elasticity estimates. Based on this overall prediction, we have derived trade paths for goods imports by the euro area, emerging economies and the United States in the various scenarios (Figure 1), following the forecast process applied by the Economics Department. When these sub-paths were prepared, due consideration was given to the fact that in the first scenario, the impacts were limited to the United States and China, whereas in the alternative scenario the impacts were assumed to extend to the euro area.

Figure 1. Increase in imports by the emerging economies, euro area and the United States in the various scenarios.



In the baseline scenario, world trade develops as described in section 1.1. of the forecast. In the first alternative projection, the United States and China intensify their protectionist measures (tariffs, quantitative restrictions and other trade barriers). In this scenario, some calculations suggest that many countries could even benefit from a trade war (Bollen and Rojas-Romagosa 2018). However, no such assumption is made in the Ministry of Finance's calculations (Figure 1), which presuppose that a bilateral trade war will have a negative impact on imports by the United States and emerging economies.

In the other alternative scenario, it is assumed that the effects of the trade war are more widespread. Disruptions are also expected to affect the financial market of emerging and developed economies. The euro area would be greatly affected by market changes in the emerging economies because 40% of all goods are imported into these countries, while at the same time the latitude in the monetary policy in the euro area is assumed to be restricted (Ikonen and Vilmi 2019). In this scenario, the impacts would be reflected on imports by all the regions examined here.

Finland's export demand, exports and GDP

The impacts of a trade war on Finland's exports and ultimately GDP would be transmitted through export demand. It is determined by the development of goods imports in the euro area, emerging economies and the United States as well as the trade share of Finnish exports. In the prediction model used by the Economics Department, the change in export demand determines the change in the volume of exports[1] together with the changes in the trade ratio, currency exchange rate and past exports.

In both alternative scenarios, the impacts on Finland's GDP are determined assuming that they only affect Finland's exports without any effect on imports. The alternative scenarios predicting the change in GDP are prepared using the Economics Department's balance of resources tool and the results are presented in Table 1. In this scenario, the

1 Export volume includes exports of goods and services. Export demand, by contrast, only shows goods export trends.

effects of US-China trade do not affect Finnish exports to any significant degree because the emerging economies and the United States account for a far lower percentage of Finland's exports than the euro area and the rest of Europe. In the multilateral trade war scenario, the impacts extend to GDP due to considerably reduced export demand and exports.

Table 1: Effect of a trade war on Finland's exports and GDP in the various trade scenarios.

	Exports, change in volume, %				
	2018	2019**	2020**	2021**	2022**
Scenario based on the Ministry of Finance's forecast	2.2	4.0	1.9	1.9	2.0
US–China trade war	2.2	4.0	1.7	1.8	1.9
Multilateral trade war	2.2	4.0	0.6	1.0	1.8
	GDP, change in volume, %				
Scenario based on the Ministry of Finance's forecast	1.7	1.6	1.0	1.1	1.2
US–China trade war	1.7	1.6	1.0	1.1	1.2
Multilateral trade war	1.7	1.6	0.6	0.8	1.2

** Projections

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1.2 Foreign trade

Slower growth in world trade and the global economy will be reflected in Finnish export growth during the outlook period. The export demand is expected to decline in 2020 mainly because of the moderate economic growth in the euro zone. The prospects in foreign trade are modest, although towards the end of the outlook period, export demand will see more favourable development.

1.2.1 Exports and imports

Service exports remain strong despite weak export demand

The estimated export demand will increase only 0.8% in 2020 owing to the falling economic prospects in Europe and the developing markets. Of Finland's key export markers, Germany is showing only moderate growth, while the new orders in manufacturing are showing no signs of recovery. Europe accounts for a large proportion of Finland's exports, which means that the demand for Finnish exports will grow more slowly than world trade this year.

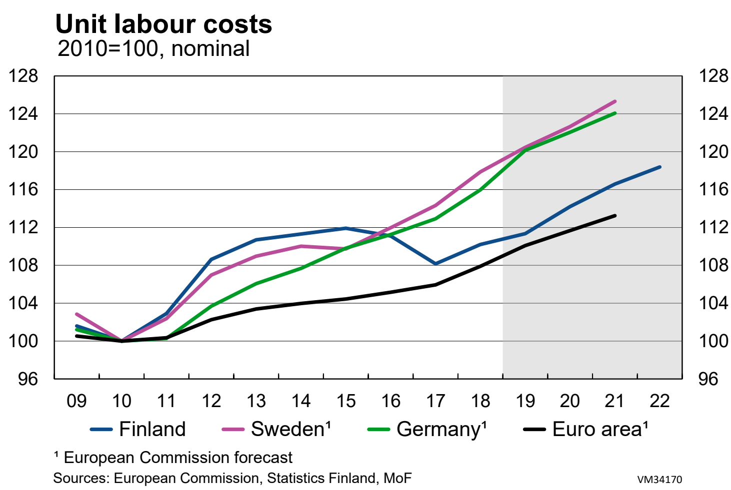
Despite the outlook on the export markets reflecting negatively on the export demand of goods, the forecast for Finnish exports are not expected to decline significantly in the next few years. In 2019, export growth will accelerate as a result of increased service exports and ship deliveries. In manufacturing, the growth in the export of goods will be modest. In the first three quarters of 2019, the volume of total exports grew by 4.8% and that of service exports by 10.5%. Service exports will continue strong in 2020, with total exports expected to show a growth of 1.9%.

In 2021 and 2022, the growth in world trade is expected to see a modest upturn. The growth of Finnish export demand will accelerate towards the end of the outlook period to 1.3% in 2021 and 1.7% in 2022. The brighter outlook for export demand is the result of the more favourable economic development in Finland's key European export markets, developing markets and the USA. The global market share of Finnish exports will maintain moderate growth throughout the outlook period as the volume of exports will show a more positive development than export demand. The exports will grow by 1.9% in 2021 and 2.0% in 2022.

In the first three quarters of 2019, the volume of imports grew by 3.5%. Service imports, in particular, showed substantial growth. The volume of imports is maintained in the early part of the outlook period by domestic consumer demand and by investments towards the end the period. The imports will grow by 2.0% in 2020, with service imports showing stronger growth than the import of goods. The growth of imports will continue to increase steadily in 2021 and 2022. The rapidly growing investments in machinery and equipment are also reflected in the volume of imports.

Table 6. Foreign trade

	2017	2018	2019**	2020**	2021**	2022**
	change in volume, %					
Exports of goods and services	8.8	2.2	4.0	1.9	1.9	2.0
Imports of goods and services	4.1	5.0	3.1	2.0	1.9	2.1
	change in price, %					
Exports of goods and services	3.3	4.2	0.4	1.4	1.5	1.8
Imports of goods and services	3.8	3.3	0.8	1.6	1.7	1.9

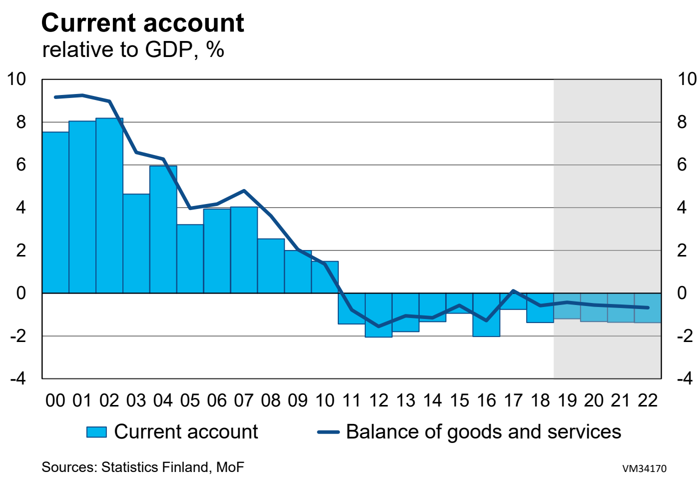


1.2.2 Prices and current account

Current account deficit will persist

Import prices will show moderate growth in the next few years, with the price of imports going up by only 0.8% in 2019. During the outlook period, the price development in industrial raw materials and oil will raise the prices of imports, and the increase in the price of imported goods will accelerate towards the end of the outlook period. The price of service imports will grow more evenly in the coming years.

The terms of trade will deteriorate in 2019 as a result of the weak development in the price of exported goods. The development of export prices remains moderate during the outlook period, with the export prices showing slightly slower increase than import prices, which means that the terms of trade will mildly deteriorate. The development in the price of exported goods largely follows that of imported goods due to the fluctuation in the price of oil and other raw materials.



The value of both exports and imports will increase in the outlook period as a result of higher volumes and higher prices. In 2019, the value of exports will grow faster than the value of imports, which will narrow the current account deficit. From 2020 onwards, the growth rate in the value of imports will slightly exceed that of exports. The balance of trade will show a slight deficit towards the end of the period covered by the forecast. With the rapid growth in service exports, the service deficit will reduce in 2019 but will bounce back slightly towards the end of the outlook period, and is estimated to reach EUR 1.7 billion in 2022. In addition, there will be no reduction in the deficit in factor incomes and current transfers, which means that the current account deficit will persist. The primary income account will remain slightly in the surplus in the outlook period.

Table 7. Current account

	2017	2018	2019**	2020**	2021**	2022**
	EUR bn					
Balance of goods and services	0.3	-1.4	-1.0	-1.4	-1.6	-1.8
Factor incomes and income transfers, net	-2.0	-1.9	-1.9	-1.9	-1.9	-1.9
Current account	-1.7	-3.2	-2.9	-3.3	-3.5	-3.7
Current account, relative to GDP, %	-0.8	-1.4	-1.2	-1.3	-1.4	-1.4

1.3 Domestic demand

1.3.1 Private consumption

Growth in household disposable real income will continue

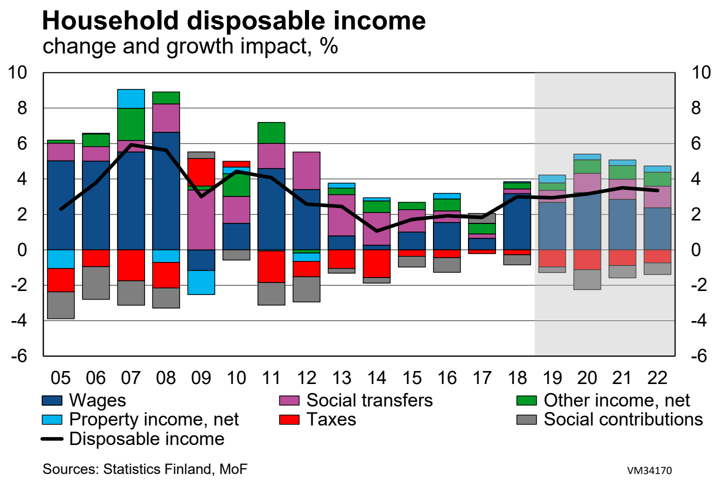
The growth in private consumption remain steady during the outlook period as household disposal income is boosted by higher earnings and a higher employment rate. Most importantly, private consumption is supported by a strong demand for services, while the growth in durables will lag behind the rest of the consumption categories.

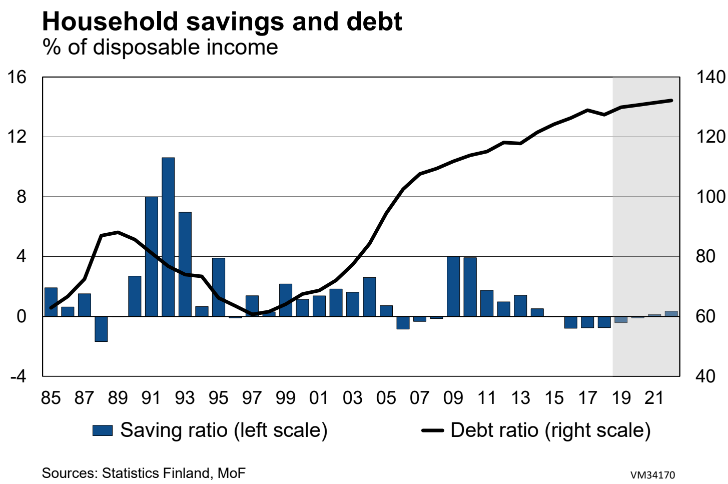
In 2019, private consumption will be boosted by higher earnings and a higher employment rate. The wage bill growth will continue, which will sustain a rapid increase in household disposable income compared with the last few years. Pensions will boost the growth of current transfers to 3% a year, owing to the increase in the number of pensioners.

In 2020, wage bill growth will be sustained by rising earnings despite a slower growth in employment. The wage bill and household disposable income will continue to grow at a rapid rate. The discontinuation of cuts in public sector holiday bonuses will temporarily accelerate the growth in earnings. Accelerating inflation will slow down the growth in real disposable income.

Earnings will continue to grow at a rapid rate in 2021. The wage bill growth will, however, slow down slightly in line with employment growth. Nevertheless, inflation will accelerate only moderately and growth in real disposable income will continue to sustain household purchasing power towards the end of the outlook period.

The growth of private consumption will slow down in 2022 as the growth of employment reaches a standstill, which will show in a slower growth of disposable income. The small upturn in household savings rate will keep the growth in private consumption lower that the growth in real income.


Household disposable income
change and growth impact, %
10
8
6
4
2
0
-2
-4
-6
05 06 07 08 09 10 11 12 13 14 15 16 17 18 19 20 21 22
Wages
Property income, net
Disposable income
Social transfers
Taxes
Other income, net
Social contributions
Sources: Statistics Finland, MoF
VM34170


Household savings and debt
% of disposable income
16
12
8
4
0
-4
140
120
100
80
60
40
85 87 89 91 93 95 97 99 01 03 05 07 09 11 13 15 17 19 21
Saving ratio (left scale)
Debt ratio (right scale)
Sources: Statistics Finland, MoF
VM34170

1.3.2 Public consumption

The largest items in public consumption expenditure are personnel expenses, and goods and services purchased. Local government consumption accounts for approximately two thirds and central government consumption for one-fourth of public consumption, while consumption by social security funds makes up the remainder.

Public consumption expenditure increased last year and the rise in local government consumption expenditure was particularly rapid compared with the preceding years. According to the quarterly national accounts data, the growth of public consumption expenditure has accelerated in the first three quarters of 2019. The value of consumption has been increased by the agreed pay rises and the discontinuation of holiday bonus cuts. Moreover, the volume of consumption expenditure has also increased. Higher demand for health and social services is one factor boosting local government consumption.

Public consumption expenditure will continue to grow throughout the outlook period. The Finnish population is ageing, which means that there is a growing need for services, while at the same time, the spending increases planned by the Government will boost the growth in public consumption expenditure. The Government Programme increases public consumption expenditure in a frontloaded manner, which shows in the growth in the volume of public consumption in 2020 in particular. One-off spending increases will also add to public consumption expenditure between 2020 and 2022.

The value of public consumption expenditure is estimated to increase by 3% per year during the outlook period. This development depends significantly on the outcomes of salary negotiations in the public sector. The existing public sector wage agreements are up for review in spring 2020. It is assumed that the pay increases in the public sector will be in line with the overall wage rises of slightly less than three per cent.

Table 8. Consumption

	2018	2017	2018	2019**	2020**	2021**	2022**
	share, %	change in volume, %					
Private consumption	100.0	1.0	1.8	1.4	1.5	1.7	1.5
Households	95.2	1.1	1.9	1.5	1.5	1.7	1.6
Durables	7.9	4.0	5.3	1.1	1.7	1.7	1.4
Semi-durables	7.6	2.2	3.4	2.7	2.0	2.2	2.0
Non-durable goods	27.4	-0.2	0.7	0.7	0.8	1.1	0.9
Services	52.3	1.8	1.7	1.7	1.7	1.9	1.8
Consumption by non-profit institutions	4.3	-1.4	0.5	0.5	0.5	0.5	0.5
Public consumption		0.2	1.5	1.5	1.8	0.1	0.6
Total		**0.7**	**1.7**	**1.5**	**1.6**	**1.2**	**1.2**
Individual consumption expenditure in general government		0.5	-0.0	2.8	1.6	0.6	0.9
Total individual consumption expenditure		1.2	1.4	1.1	1.4	1.5	1.5
Households´ disposable income		1.8	3.0	2.9	3.2	3.5	3.3
Private consumption deflator		0.7	1.1	1.1	1.3	1.5	1.5
Households´ real disposable income		1.1	1.8	1.8	1.8	1.9	1.8
		%					
Consumption as proportion of GDP (at current prices)		76.0	75.4	75.2	75.6	75.7	75.7
Household savings ratio		-0.8	-0.8	-0.4	-0.1	0.1	0.3
Household debt ratio[1]		128.9	127.4	129.9	130.6	131.4	132.2

[1] Household debt at end-year in relation to disposable income.

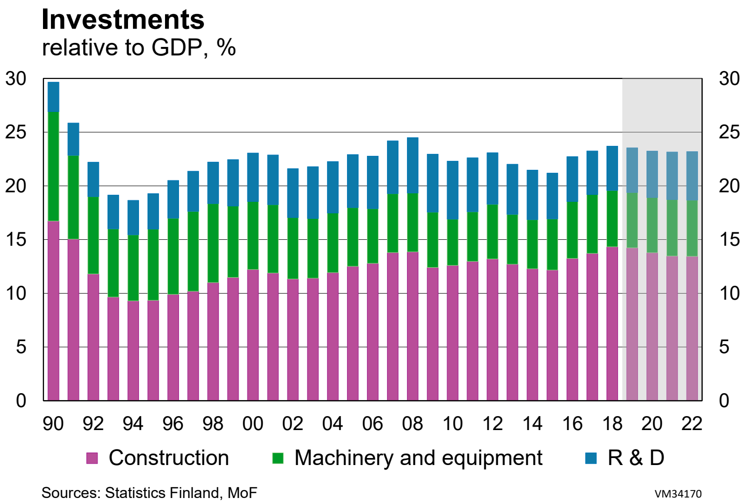
1.3.3 Private investment

Growth after decline

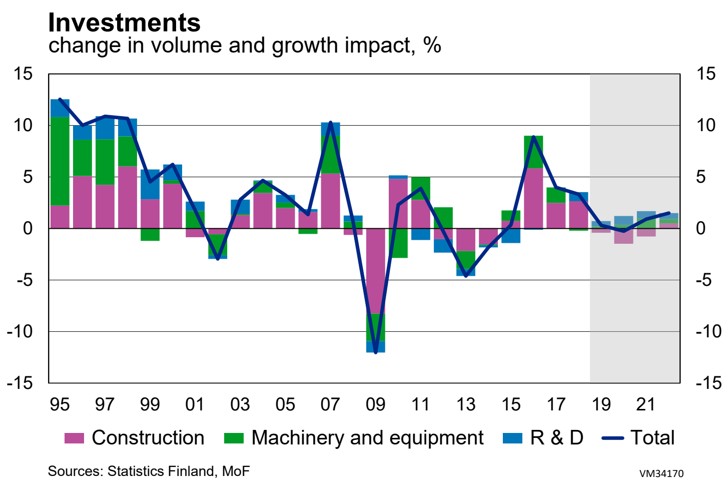
Private investment is expected to fall next year before taking a slow upturn and reach a growth of a couple of per cent towards the end of the outlook period. Residential construction investment, in particular, will decline. The forecast for private investments show little change compared to the previous one. Over the period from 2019 to 2022, the average annual growth rate is forecasted as low as 0.7%. The ratio of private investment to GDP will fall from the current level by less than half a percentage point to settle at around 19% in 2022.

The development during 2019 seems to have followed expectations and has remained slow. However, substantial differences were seen between individual investment items. Research and development expenditure, in particular, grew strongly during the third quarter of 2019.

The decline in residential construction investment shows in the number of new developments, with approximately seven thousand fewer new projects launched this year than last year. In the light of historical data, the prediction for 2019, at 38,000, is set ambitiously. The number of building permits issued has declined significantly. In 2020, only 35,000 new projects are estimated to be launched. The next upward trend in residential construction investment is not expected until 2022. However, the level of housing investment remains at a healthy level and is supported by the positive development in the household disposable real income, low interest rates and good employment rate. Renovation construction investments are expected to grow steadily, at an annual rate of between one and two per cent, throughout the outlook period.



Investment in building construction (other than residential) will take a turn downwards next year. Industrial developments have been issued several permits but there are many uncertainties affecting the launch of these projects. The number of large production facility investments currently in progress in Finland is exceptionally high. These major projects are expected to generate an investment demand of approximately EUR 1 billion to be distributed mainly between 2020 and 2021. The large construction projects planned to start in 2019-2021 total about EUR 7 billion. The projects are expected to involve industrial plant production at the first stage of the outlook period and warehouse construction at the latter stage of the period.



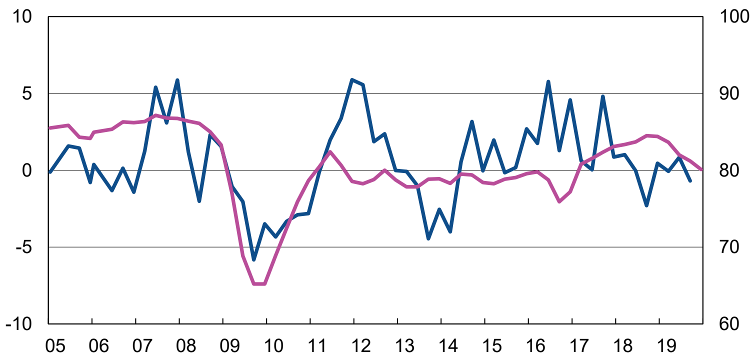
Investments in public service buildings will increase. More building permits for care institutions and conference buildings have been granted, which means that more projects in these building categories can be expected. Instead, the amount of investment in business premises are 75% lower than the pre-financial crisis record.

Service industries will sustain investments in machinery, equipment and transport equipment. The growth in these investments is anticipated to accelerate during the outlook period, reflecting the impact of major construction projects.

The growth in civil engineering investment is largely dependent on public investment. The most recent indicators on the turnover and sales in civil engineering are signalling fairly robust growth.

The growth in research and development expenditure has been corrected in the statistics, showing an increase of 5% in 2018 (previously 2.5%). The growth has continued to be exceptionally rapid this year and the forecast for the whole year has been raised to 3%. It is difficult to predict how permanent this phenomenon is. The growth forecasts for the electrical and electronics industry are, nonetheless, positive and, subsequently, the growth expectation in R&D expenditure for 2020-2022 has been set relatively high.

Investment and capacity utilization rate



Investment in machinery and equipment, change in moving annual total, % (left scale)
Capacity utilization rate, industry, 6-month moving average, % (right scale)

Source: Statistics Finland, Confederation of Finnish Industries VM34170

Table 9. Fixed investment by type of capital asset

	2018	2017	2018	2019**	2020**	2021**	2022**
	share, %	change in volume, %					
Buildings	51.2	5.8	5.2	-1.1	-3.8	-1.7	1.3
Residential buildings	30.9	5.3	5.4	-2.4	-4.4	-1.9	1.4
Non-residential buildings	20.3	6.6	5.0	0.9	-2.9	-1.3	1.1
Civil engineering construction	9.3	-3.1	0.6	1.6	4.9	0.4	-1.1
Machinery and equipment	22.1	6.4	-0.9	0.9	1.6	4.5	1.8
R&D-investments[1]	17.4	0.1	5.0	3.0	4.9	3.7	3.0
Total	**100.0**	**4.0**	**3.3**	**0.3**	**-0.3**	**0.9**	**1.5**
Private	82.2	4.8	2.9	0.2	-0.9	1.3	2.2
Public	17.8	0.2	5.5	0.9	2.8	-0.7	-1.7
		%					
Investment to GDP ratio (at current prices)							
Fixed investment		23.2	23.7	23.5	23.2	23.2	23.2
Private		19.2	19.5	19.3	18.9	18.9	19.1
Public		4.1	4.2	4.2	4.3	4.2	4.1

[1]Includes cultivated assets and intellectual property products

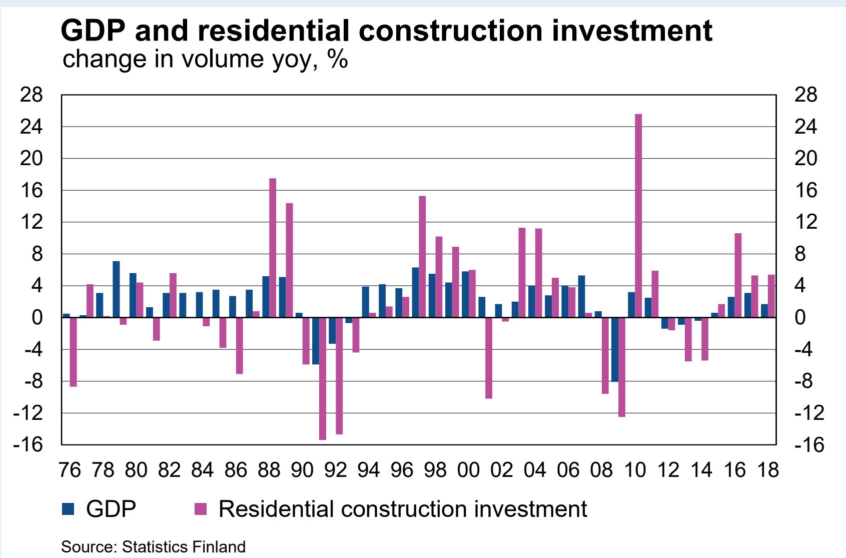
BOX: OVERVIEW OF RESIDENTIAL CONSTRUCTION INVESTMENT IN THE EURO AREA AND FINLAND

The EU Commission (2018) has analysed the cyclical patterns of residential housing investment in the euro area and the six largest euro countries. Finland was not included in the country-by-country analysis. In its report, the Commission finds that changes in residential construction investment are considerable. The Commission explored the possibility of making use of residential construction investment in predicting changes in GDP and made an attempt to identify the reasons underlying the changes in these investments. A similar analysis is made here using the data available on Finland.

Residential construction investments decreased substantially in Finland during the years of recession. Conversely, the investments also increased sharply over a period of several years. Since 1975, residential construction investment has decreased 18 times and increased 25 times. Over the same 42-year period, GDP contracted during seven of these years. From 1975 to 2017, the ratio of residential construction investment to GDP stood at 7% on average. However, the ratio was clearly higher up to the end of the 1980s, after which it has fluctuated between 5 and 6.5 per cent.

From 1976 to 2017, GDP grew at an annual average rate of 2.2%. Over the same period, construction investment increased by an average of 0.9% and residential construction investment by 1.0%. During 1976-2017, the standard deviation in GDP growth was 3.1%, whereas that of construction investments was 7.5% and that of residential construction investment even higher, or 8.7%. From 1988 to 2017, the standard deviation in residential construction investment was even higher, reaching 9.9%.

Figure: GDP growth and residential construction investment during 1976–2018



During the reporting period, the length of the business cycle[1] in residential construction investment was over six years, more or less the same as the average business cycle of the entire economy, or 5 to 7.5 years. Both in Finland and the rest of the euro area, investments in housing production have almost always declined when GDP decreases. The business cycles of residential construction investment and GDP have a positive correlation. It appears that the falls in housing construction investments in Finland have been unrelated to the trends in other euro countries, until the euro was adopted as a common currency. Such widely felt international shocks included the 2008 financial crisis and the 2013 debt crisis.

The table below shows the correlation factors between changes in GDP and residential construction investment in the various quarters. While it would appear that residential construction investment leads GDP cycles by one period, the correlation is not much greater between two preceding or concurrent periods. The correlation between residential building permits and the change in GDP is fairly weak, even if it is greatest in the quarter preceding the GDP cycle by three periods. As such, this is logical because permits always precede investments, which are then reflected in GDP. Housing production starts and investments are equally valid indicators for periods preceding GDP cycles. Housing starts predict residential investment quite well. The correlation between the change in residential construction investment and the change in the construction confidence indicator is high in the preceding and concurrent period.

Correlation table (ρ_{ij}):

i	indicator j	t-5	t-4	t-3	t-2	t-1	t
GDP	Residential construction investment	0.16	0.31	0.29	0.38	**0.43**	0.38
	Residential building permits	0.10	0.22	**0.25**	0.18	0.18	0.20
	Housing starts	0.26	0.15	0.28	0.22	**0.42**	0.08
Residential investment	Housing starts	-0.06	0.16	0.40	**0.55**	0.52	0.42
	Construction confidence indicator	-0.32	-0.03	0.17	0.46	0.52	**0.55**
	Construction orders	-0.37	-0.19	0.04	0.25	**0.45**	**0.45**

1 The length of the business cycle is measured from trough to trough with an intervening peak. Alternatively, length can be measured from peak to peak. While this gives a slightly more positive outcome, it does not affect rounding up to whole numbers. The analysis covers the years 1976–2017 with only complete cycles included. Business cycles have been analysed, inter alia, Juvonen et al. (2019).

A housing unit is a special commodity because it is simultaneously an investment and a consumer good. Its value in use decreases slowly but its sale is costly compared to other investments. Additionally, it can normally be used as collateral. Another difference, when compared to other markets, is that the construction and repair of housing units is closely controlled and that there are a lot of political objectives and initiatives affecting the housing market. For example, in compact urban areas, the supply of building land is limited and construction is very strictly regulated, which makes housing supply inelastic while accentuating price fluctuations. Elasticity in housing prices has been analysed and simulated by Oikarinen (2015) and Alho et al. (2018), among others.

The following section will review the power of a number of indicators in explaining the changes in residential construction investment using the same method as the Commission's report. Use is made of error correction models, which are highly suitable for assessing macro quantities. While many macro quantities increase with time, their mutual relationship may settle at some equilibrium level, making it possible to analyse departures from this equilibrium using the error correction models. Both the Commission's report and the present analysis is based on Carnot et al. (2011).

In the long term, residential construction investment is explained by demography, the real disposable income of households and the real interest rate. The real interest rate illustrates consumers' intertemporal choice between investments (residential construction investment) and consumption. In the short term, housing prices (increases) are thought to reflect the value of a housing unit as an investment and affect (increase) supply. Similarly, the unemployment rate is included in the short-term equation to reflect the uncertainty of household income generation.

The error correction model is compared to a simple AR(1) model. When the long-term explanatory variables of the error correction model were examined, the analysis started with the unit roots and cointegration of time series. Unit root tests suggest that residential construction investment has a unit root (i.e. first difference of the time series is a stationary process), similarly to population, even if one test type rejects the unit root when the phenomenon is explained by both the constant and time trend. According to the tests, the real disposable income of households has a unit root, even if one test rejects root with regard to trend and constant. With the real interest rate, unit root tests yield varying results, which also depend on the selected time period. Cointegration tests suggest that there is one cointegration vector between housing construction investments, population size, real disposable income and real interest rate.

Results of model analyses[2]

		Finland (quarterly data)	Euro area (Commission's calculation; annual data)
	AR(1)	1992q3-2018q4	1978-2017
long term			
constant			
log(käyt.tulot)		1.16***	0.97***
log(väestö)			
rkorko			
short term			
d(log(asuntoinv(-1)))	0.35***		0.40***
d(log(asuntoinv(-2)))		0.37***	
d(log(käyt.tulot(-1)))			-0.60***
d(log(ktulot(-2)))			
d(log(unemp))			-1.52***
d(log(hpi))		0.85***	0.67***
d(log(väestö(-1)))			
error correction term		-0.11	-0.24
no. of observations	108	106	39
adj. R-square	0.11	0.42	0.65
Durbin-Watson	2.26		1.82

According to the EU Commission's report (2018), residential construction investment is, in the long term, determined by the real disposable income of households in particular and, in some Member States, by demographic developments. In contrast, short-term residential investment is increased by rising housing prices and a fall in unemployment

In the long term, the coefficient of real disposable income appears to acquire a significant value in the Finnish data as well. By contrast, the size of the population fails to explain residential investments even in the long term, while against expectations the coefficient of real interest rate acquires a positive value, albeit low. In Finland, too, rising housing prices increase residential construction investment in the short

2 Statistical significance at a level of 1% (***); 2% (**) and 5% (*). käyt.tulot.=real disposable income of households; asuntoinv=real residential construction investments; väestö= Finland's population; rkorko=12-month interest rate – annual change in consumer price index; unemp=unemployment rate; hpi=real price index of existing owned flats. Log refers to logarithmitized variable. d preceding the variable denotes change; (-1) after the variable refers to the preceding period. The data are based on the official statistics released by Statistics Finland.

term and slightly more than in the rest of the euro area. Lindblad et al. arrive at the same conclusion in their paper (2019). The unemployment rate acquires no significant coefficient in the Finnish data. The error correction term in the Finnish data is relatively low. It suggests that the relationship between residential investment and the key explanatory variable – real disposable income – has been in average quite close to its equilibrium.

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1.3.4 Public investment

Public investments account for almost 20% of all investments. Local government investments account for more than half of the total, while central government investments account for the rest. The proportion of social security funds is very small. Almost 30% of public investments are civil engineering investments, and other building investments account for a same proportion of the total. Research and development investments account for slightly more than 25% and machinery and equipment investments for slightly over 10% of the total.

Public investment will increase by one per cent this year. The rapid growth in local government investments will continue. Infrastructure investments and rapid construction of hospitals as well as other health and social service buildings are two of the factors sustaining the growth. At the same time, there will be a sharp fall in central government investments as the key projects of Prime Minister Sipilä's Government have come to an end.

The growth in public investment is expected to accelerate next year as a result of increases laid down in the Government Programme. Sizeable hospital investments, reduction in the maintenance backlog and the major investment projects in growth centres are some of the factors keeping investments at high level in the coming years. The amount of public investment is expected to decline in 2021 and 2022. Central government investments, in particular, will decline following the peak in 2020.

Public investment is at an exceptionally high level in relation to GDP. At the onset of the financial crisis, the ratio of public investment to GDP was about 3.5%. During the financial crisis, the ratio increased to slightly over 4% and, next year, it is estimated to stand at 4.3% to GDP.

1.4 Domestic production

1.4.1 Total output

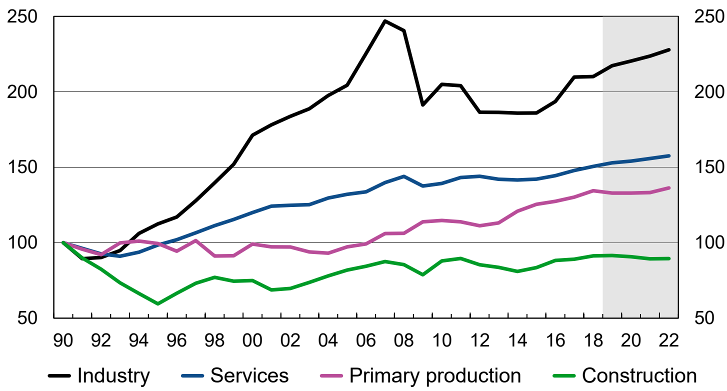
Continued economic growth predicted

Economic growth accelerated during the first half of the year. The overall economic value added grew by 1.6% from last year between January and September. The growth was most notably supported by manufacturing, but also the value added generated by services increased from the previous year. In contrast, the value of primary production decreased and construction showed no signs of growth. The value added from manufacturing was higher than in the previous year with the exceptions of the forest industry and energy supply. The production in electronics and electrical industries increased by nearly 13%. Service production also grew across the board, with only the financial and insurance sector showing a decline in the value added in the first half of the year.

Productivity of the economy is weak. Labour productivity per hours worked contracted last year and the weak trend has improved only marginally during the first half of 2019. The growth in industrial productivity has improved despite the overall industrial productivity still remaining low compared to other countries. Labour productivity in Finland only reached the pre-financial crisis levels in 2017. It is still above the euro area average but the gap has narrowed considerably compared with the situation before the financial crisis. This can largely be explained by the structural changes in Finland's electronics industry.

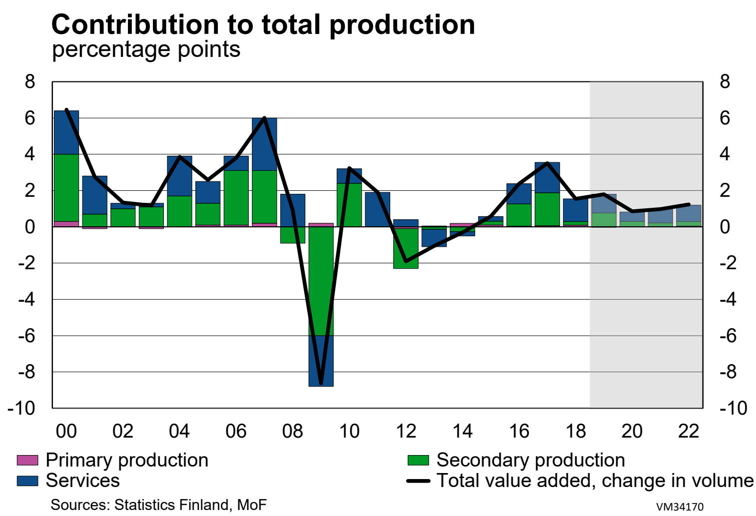
Production

1990=100



Sources: Statistics Finland, MoF

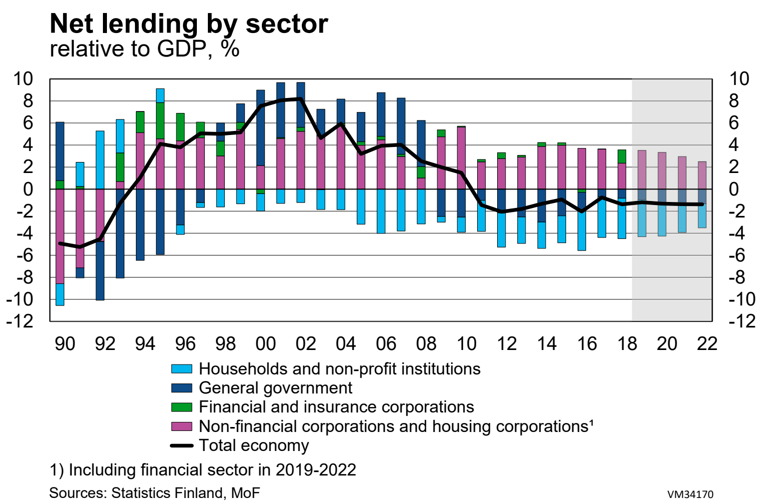
Despite the negative news from around the world, the short-term domestic economic outlook is still positive. The order books in the construction and technology sectors have kept to an average level. In addition, the public, industrial and agricultural construction sites had more new projects last year, and businesses in several service sectors expect their sales to increase. However, there is increasing evidence of constraints on growth: in manufacturing, new orders have stalled and the number of planning permits issued has fallen in the early part of the year. Furthermore, the lack of demand is more wide-spread than it was at the end of last year in many private business sectors. In fact, most industrial, construction and service-sector companies are facing obstacles to growth.



Owing to the constraints on the growth of production, economic activity is slowing down. The slowing down of the growth is driven by the weakening international export demand for Finland in the wake of declining world trade, and a downturn in the construction sector after a strong period. The period of the most rapid growth would seem to be over. According to the business tendency surveys of the Confederation of Finnish Industries, the growth in manufacturing and construction industries will decline in the next six months. The forecast's background assumptions concerning continuing growth of world trade and the global economy also support export-oriented industrial production and therefore, indirectly, business services. Growing imports in Finland's most important trading area, Europe, are good news for Finnish industries manufacturing investment and intermediate products.

As a result of the positive development of the early part of the year, the gross value added for the economy will grow by a good 1.5% this year. The growth will slow down to under 1% next year, before a slow recovery and brisker growth that will exceed 1% in 2022. Such sluggish growth in output is clearly below the average in this millennium.

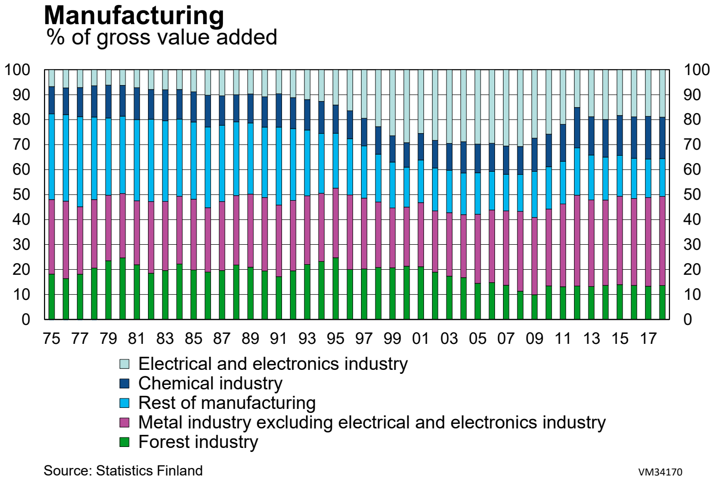
The forecast described above involves a large number of risks. Simultaneous escalation of a large number of uncertainties may slow down the growth by weakening international demand and, consequently, export-oriented industrial production in particular. At the same time, however, capacity increases in industries and services, arising from the realisation of investment plans, may lead to faster than expected growth.



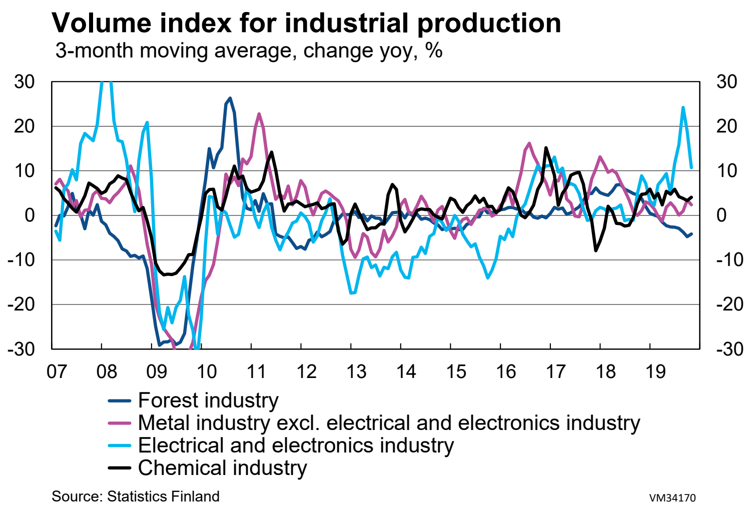
1.4.2 Secondary production

Industrial production will not decline

The industrial climate has shown unsteady improvement this year. In the early part of the year, overall industrial production increased markedly on the previous year, but the growth was largely due to the metal industry. The increase of value added in the electrical and electronics industry in particular has been very strong. On the other hand, there has been little increase in production in the chemical industry, and production in the forest industry has continued to decline.



The majority of Finnish industrial output consists of raw materials and investment goods for export, the demand of which is affected by fluctuations in the world economy and global trade as well as the need for changes in production capacity. In terms of nominal unit labour costs, the cost competitiveness of Finnish companies is expected to improve this year. The value of new orders received by industrial companies has remained at last year's level. However, as demand decreases, the order stock has declined to a lower than average level in many sectors and led to lower production expectations for the next six months.



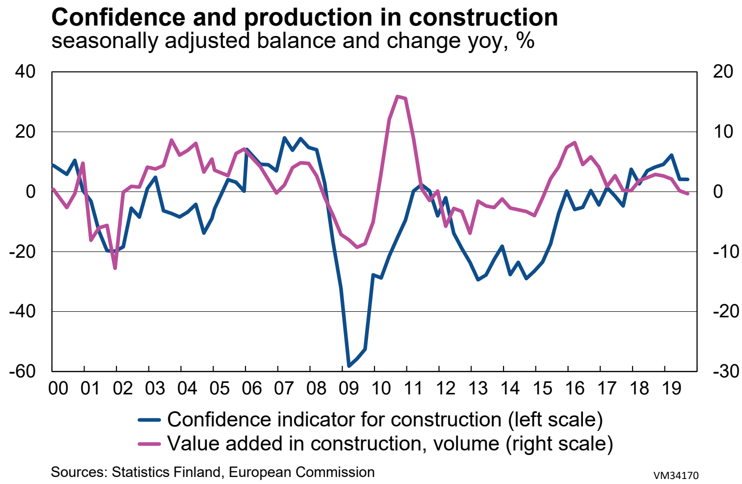
According to business tendency surveys, production is expected to decline in the near future. Especially in the forest and metal industries, there are more industrial companies expecting a decline than those expecting a growth. In the chemical industry, the expectations are slightly more positive.

In the forest industry, the demand for pulp and paperboard will increase production, but the downward trend in the demand for paper will undermine growth in the sector as a whole. In the metal industry, the short-term prospects of the electronics and electrical industries are brighter than in the mechanical and metal products industries. In addition, transport equipment orders will guarantee production for years to come. As a whole, industrial output will increase by 3.5% this year, boosted by the strong output at the beginning of the year.

In the next few years, export demand will grow slowly in line with the outlook for world trade, and foreign imports are expected to increase especially in the European market, which is important to Finnish companies. Increases in production capacity and companies' efforts to improve the competitiveness of their products will support industrial production in the coming years. According to one forecast, there is a threat that cost competitiveness will decline in relation to the euro area. Industrial value added will increase by about one and a half per cent per year over the next three years. Despite the growth, the volume of industrial output in 2022 will remain slightly under ten per cent lower than in the peak year 2007.

Construction will decline from a very strong level

Construction has no longer supported the growth in total output, since the value added in the sector in January-September remained at the level of the previous year. After four years of growth, the value added in construction is almost 15% above the baseline. The growth has been strongest in the construction of new buildings; however, there has also been a marked increase in civil engineering and renovation. During the first half of the year, the construction of new industrial buildings and especially civil engineering have increased value added.



Fewer construction projects were launched during the early year than the year before. In particular, the number of projects involving blocks of flats as well as commercial and office buildings was significantly smaller than in the previous year. Migration continues to increase demand for housing in growth centres. Therefore, there is more new construction in growth centres than outside them, resulting in an uneven regional distribution of growth. There is a great need for renovation, especially in residential and public buildings.

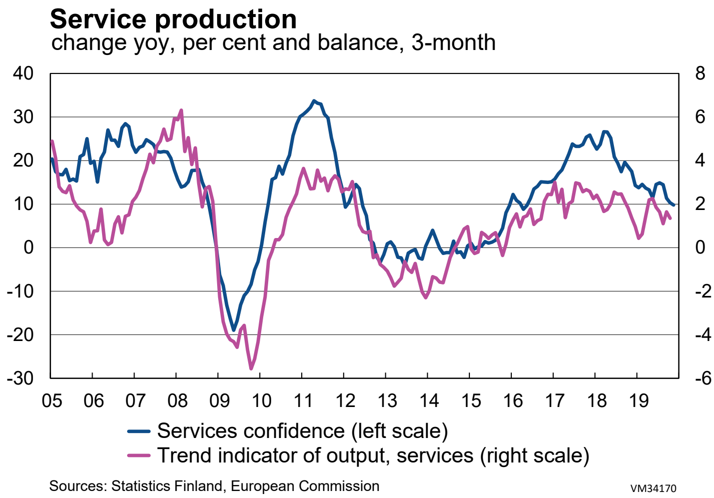
Many construction projects are nearing completion this year, and some of them are one-off ventures which will not be replaced by similar new construction projects in the near future. The number of building permits has also decreased, albeit from a high level, especially in residential, commercial and office construction. In addition, the construction sector is more often affected by a lack of skilled labour than the other main sectors. Construction output will not increase anymore this year.

Construction will continue at a brisk rate in growth centres also in the next year and the year after that. However, the trend in the number of building permits suggests that the number of new start-ups will turn to a decline from a high level. Construction of blocks of flats and business premises is expected to decrease the most. Public construction and state budget increases maintain construction activity together with agricultural construction. In 2020 and 2021, the focus will be on renovations and a small number of regional construction projects, resulting in a downturn of about one percent a year in the value added in construction. In 2022, construction is expected to resume a slow upward trend.

1.4.3 Services

Services support economic growth

Service production has accelerated economic growth. The value added in services increased by 1,5% in the early part of the year. The growth was wide-ranging since, with the exception of financial and insurance activities, both private and public services increased. Growth was particularly strong in business service sectors. Companies increased their sales not only domestically but also abroad, as service exports increased.



The outlook of private services is still positive. Sales are on the increase and are generally expected to continue to grow during the next six months. In the service industries, the lack of demand and the availability of skilled labour slow down growth. Overall, more than half of the companies participating in business cycle surveys have barriers to growth. A shortage of social workers, cleaners and doctors is most prevalent. Best conditions for growth are found in information and communication services as well as in the financial and insurance sector. Retail and wholesale volumes are also expected to increase. By contrast, transport sales expectations are lower than in other industries. This year the value added in services will increase by over 1.5% on the previous year.

Service production will continue to be supported by the demand for end products and intermediate products in the industry and other service sectors, which means that there is still room for growth in the service industries. Consumer-driven services will benefit from improved purchasing power. However, the decline in construction output will reduce the need for services in the construction sector. On the other hand, budgetary investments will increase public service production. In the next three years, service production will grow at a rate of one per cent per year.

Table 10. Production by industry

	2018	2017	2018	2019**	2020**	2021**	2022**
	share, %[1]	change in volume, %					
Industry	21.0	8.4	0.1	3.5	1.4	1.5	1.8
Construction	7.3	1.0	2.4	-0.0	-0.9	-1.5	0.2
Agriculture and forestry	2.8	2.2	3.3	-1.2	0.0	0.2	2.3
Industry and construction	28.4	6.5	0.7	2.6	0.8	0.7	1.4
Services	68.8	2.4	1.8	1.6	0.8	1.1	1.1
Total production at basic prices	100.0	3.5	1.5	1.8	0.9	1.0	1.2
GDP at market prices		3.1	1.7	1.6	1.0	1.1	1.2
Labour productivity in the whole economy		2.8	-0.9	1.1	0.4	0.8	1.2

1) Share of total value added at current prices.

1.5 Labour force

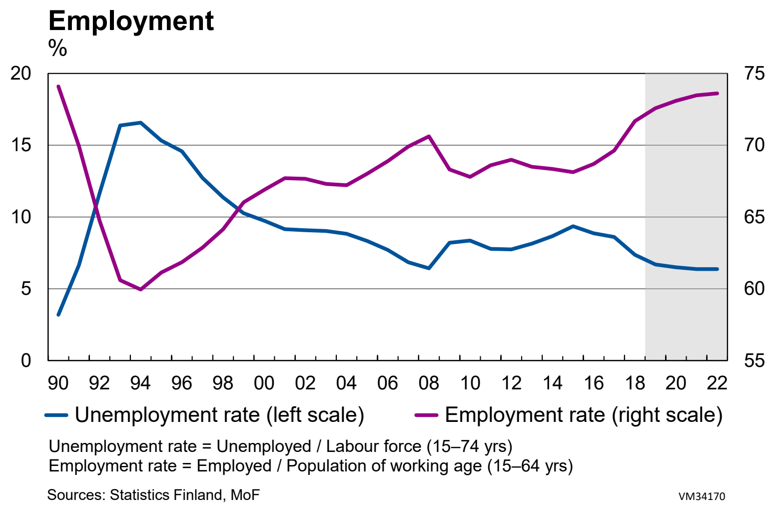
Reducing unemployment is becoming increasingly difficult

Employment picked up again in the autumn of 2019, following a weaker employment trend in the beginning of the year. In October, the trend of the employment rate stood at 72.7%. The number of employed is estimated to increase by one per cent in 2019, with the average annual employment rate reaching 72.6 per cent.

In 2019, unemployment has hardly decreased at all, the trend of the unemployment rate remaining at around 6.7% between January and October. The unemployment rate is expected to remain at 6.7% for 2019 as a whole.

Labour demand has remained at a good level, although the long-term growth trend in job vacancies is stabilising. According to Statistics Finland, the number of job vacancies in the third quarter of 2019 was 48,500 on average, which is slightly more than a year before.

According to the confidence indicators of the European Commission, the employment expectations of Finnish companies remained high, although the employment outlook for manufacturing industries weakened in the autumn. When measured with the vacancy rate (the percentage of job vacancies of all jobs), the demand for labour in Finland has been at an average EU level in recent months.



The low unemployment rate has increased tightness in the labour market, which, in turn, reinforces the pressure to raise wages and creates labour bottlenecks in the economy. In 2020, the growth in employment will gradually slow down as the demand for labour weakens due to a decline in housing construction and gloomy export prospects. However, due to the high number of job vacancies and continued moderate economic growth, the employment level is expected to increase by 0.5% in 2020. The employment rate will rise to 73.1%.

Driven by employment growth, the number of unemployed persons will decline slightly in 2020, but the employment of the remaining unemployed will become increasingly difficult with current economic structures. The projected unemployment rate for 2020 as a whole is 6.5%.

Sluggish economic growth combined with a faster increase in nominal wages will stop the growth in demand for labour in 2020 and 2021. The growth in the number of employed persons will slow down to 0.3% in 2021, and the employment rate will no longer improve in 2022. The rising employment rate will stop at 73.6% by 2022 as the working-age population continues to shrink. Therefore, the projected economic growth will not be sufficient to raise the employment rate to the 75% target in the Government Programme without significant additional measures.

As employment increases, the number of unemployed persons will also continue to decrease slightly in 2021, but the decline in the unemployment rate is expected to stop at 6.4% in 2022.

The number of the long-term and structurally unemployed has continued to decrease in 2019. According to the Employment Service Statistics of the Ministry of Economic Affairs and Employment of Finland, the number of the structurally unemployed in October 2019 was about 10,000 lower than a year earlier. Despite the decline in long-term unemployment, the number of the long-term unemployed, aged 20-54, is still significantly higher than during the previous economic upturn in 2008. The stagnation of the decline in the unemployment rate, as the number of job vacancies continues to grow, also indicates that labour market matching problems have increased in recent months.

As the situation in the labour market becomes more tense, labour shortages may arise in certain occupational groups. According to the occupational barometer of the Ministry of Economic Affairs and Employment of Finland, there is a special shortage of social and health care service professionals as well as cleaners. According to the business tendency survey published by the Confederation of Finnish Industries (October 2019), the recruitment problems of industrial companies have eased in recent months, and the lack of demand has instead become the main obstacle to growth.

Table 11. Labour market

	2017	2018	2019**	2020**	2021**	2022**
	annual average, 1,000 persons					
Population of working age (15–74 yrs)	4114	4124	4130	4131	4123	4111
change	5	10	6	1	-8	-12
Population of working age (15–64 yrs)	3451	3439	3431	3423	3416	3410
change	-12	-12	-8	-8	-7	-6
Employed (15–74 yrs)	2473	2539	2565	2578	2586	2586
of which 15–64 yrs	2403	2465	2490	2502	2510	2510
Unemployed (15–74 yrs)	233	202	184	179	176	176
	%					
Employment rate (15–64 yrs)	69.6	71.7	72.6	73.1	73.5	73.6
Unemployment rate (15–74 yrs)	8.6	7.4	6.7	6.5	6.4	6.4
	1,000 persons per annum					
Immigration, net	17	16	17	15	15	15

1.6 Incomes, costs and prices

1.6.1 Wages and salaries

Nominal earnings are expected to rise by 2.5% in 2019. As employment continues to improve, the total wage bill is expected to increase by 3.6%.

Low unemployment and labour bottlenecks in certain sectors increase tension in the labour markets and put pressure on wages. On the other hand, the slowdown in the growth of world trade and the weakening of industrial demand prospects reduce possibilities for wage increases. Reinstatement of the holiday bonuses in the public sector will also temporarily boost nominal earnings in 2020, and as a result, earnings are expected to grow by 3% and the wage bill for the entire economy by 3.5%.

In 2021 and 2022, nominal earnings will increase by 2.8%. The wage bill for the entire economy will grow by 3.1% in 2021 and 2.8% in 2022.

Table 12. **Disposable income**

	2018	2017	2018	2019**	2020**	2021**	2022**
	share, %	change, %					
Compensation of employees	47.0	0.7	3.5	2.9	3.5	3.1	2.6
Wages and salaries	38.9	2.4	4.1	3.6	3.5	3.1	2.8
Employers' contributions to social security schemes	8.1	-6.2	0.4	-0.7	3.1	3.0	2.9
Property and entrepreneurial income, net	23.5	11.0	6.0	4.7	3.5	4.4	4.5
Taxes on production and imports minus subsidies	13.2	1.6	5.1	2.9	2.2	2.2	2.7
National income	100.0	3.5	4.4	3.4	3.3	3.3	3.3
Disposable income		2.7	3.6	4.3	2.9	3.0	3.2
Gross national income, EUR bn		226	235	243	250	257	265

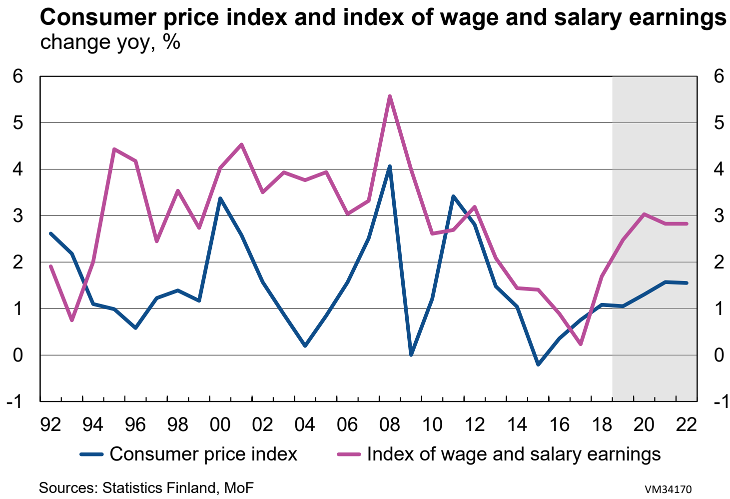
Table 13. **Index of wage and salary earnings and labour costs per unit of output**

	2017	2018	2019**	2020**	2021**	2022**
	change, %					
Index of negotiated wage rates	-0.3	1.2	2.0	2.3	2.1	2.1
Wage drift, etc.	0.5	0.5	0.5	0.7	0.7	0.7
Index of wage and salary earnings	**0.2**	**1.7**	**2.5**	**3.0**	**2.8**	**2.8**
Real earnings[1]	-0.5	0.6	1.4	1.7	1.2	1.3
Average earnings[2]	0.7	1.5	2.9	3.1	2.9	2.8
Labour costs per unit of output whole economy[3]	-2.6	1.9	1.0	2.6	2.1	1.5

1) The index of wage and salary earnings divided by the consumer price index.
2) Computed by dividing the national wage bill by the number of hours worked by wage and salary earners. The figures are affected by structural changes in the economy.
3) Compensation of employees divided by gross value added in volume at basic prices.

1.6.2 Consumer prices

In the first three quarters of 2019, the annual change in the consumer price index averaged 1.1%, but in October inflation declined to less than 1%. There are several factors behind this development. For example, the prices of fresh food, consumer goods and fuels were lower in October than in the corresponding period in the previous year. On the other hand, the prices of services and processed food products were clearly up on the previous year. In October, inflation stayed at 0.7% also in the euro area, which means that the slowdown in inflation is an international phenomenon driven, in particular, by a decline in crude oil prices compared to the previous year.



The forecast for inflation in 2019 is 1.1%, which means that consumer prices are expected to rise at the same rate as last year. Overall, the prices for services are projected to grow by 1.9% in 2019, which is clearly faster than the year before. However, as in 2018, the effect of commodity prices on inflation will be clearly negative, with the result that core inflation will continue at a mere one per cent.

The prices of food products (including alcohol and tobacco) will rise supported by tax increases, but slower than in the previous year. The rise in energy prices is also projected to be slower than last year, even though the price of electricity, which is at a higher level than last year, has maintained energy inflation in Finland.

Inflation as a whole is expected to moderately accelerate in the following years of the forecast period. Gradually, increased earnings are expected to be reflected in prices more broadly, and consumer demand will grow moderately. In the euro area, market interest rates are expected to remain low over the forecast horizon. The national consumer price index is expected to rise by 1.3% in 2020, 1.6% in 2021 and 1.6% in 2022. The tightening of indirect taxation required by the Government Programme will accelerate inflation by an estimated 0.1 percentage points in 2020, and by just under 0.3 percentage points in 2021.

According to the September estimates of Eurosystem experts, euro area inflation is expected to slow down to 1.2% in 2019 from 1.8% last year. Thereafter, inflation is expected to slow down further to 1.0% in 2020 and to rise to 1.5% in 2021. In Finland, inflation is therefore projected to remain above the euro area average over the forecast period.

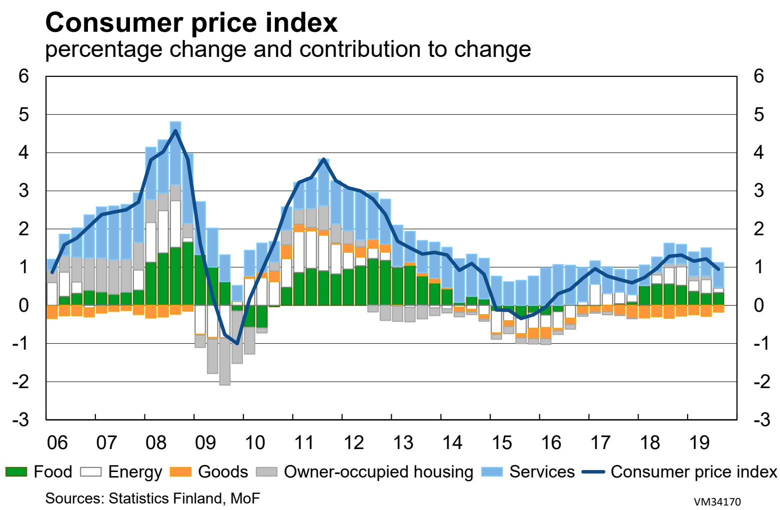


Table 14. Price indices

	2017	2018	2019**	2020**	2021**	2022**
	change, %					
Export prices[1]	3.3	4.2	0.4	1.4	1.5	1.8
Import prices[1]	3.8	3.3	0.8	1.6	1.7	1.9
Consumer price index	0.7	1.1	1.1	1.3	1.6	1.6
Harmonised index of consumer prices	0.8	1.2	1.2	1.4	1.6	1.6
Basic price index for domestic supply, including taxes	4.9	4.7	1.0	2.0	2.2	2.2
Building cost index	0.3	2.2	1.1	1.6	2.1	2.2

[1] As calculated in the National Accounts

2 Public finances

2.1 General government finances

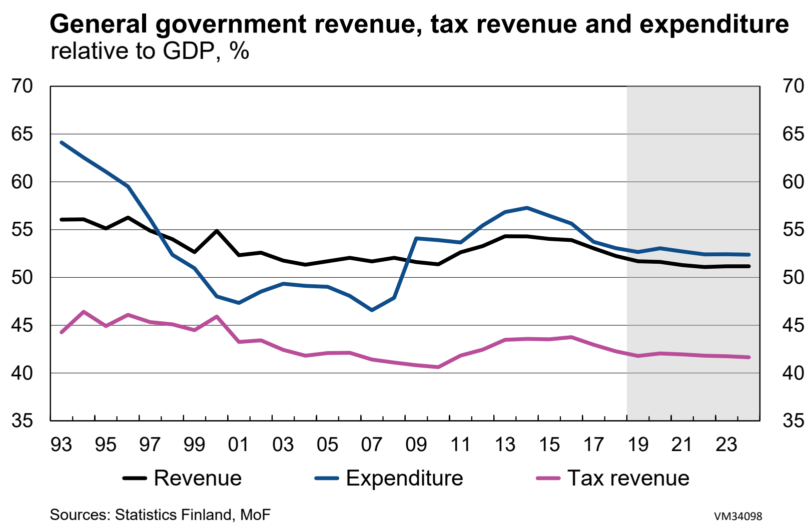
The favourable economic cycle in the Finnish economy towards the end of the decade has improved the state of public finances. The deficit has been declining for three years, and public debt to GDP has fallen to around 60%. However, as the economic cycle cools, the improvement of the budgetary position of public finances has come to a halt. In addition, the frontloaded permanent and temporary expenditure increases decided by the government will increase the deficit from 2020 onwards. The debt ratio will start to rise again at the beginning of the decade.

There are still difficult structural problems in public finances. The ageing population has already increased pension expenditure and will also increase health care and long-term care expenditure in the future. Public finances are not on a sustainable footing in the long term.

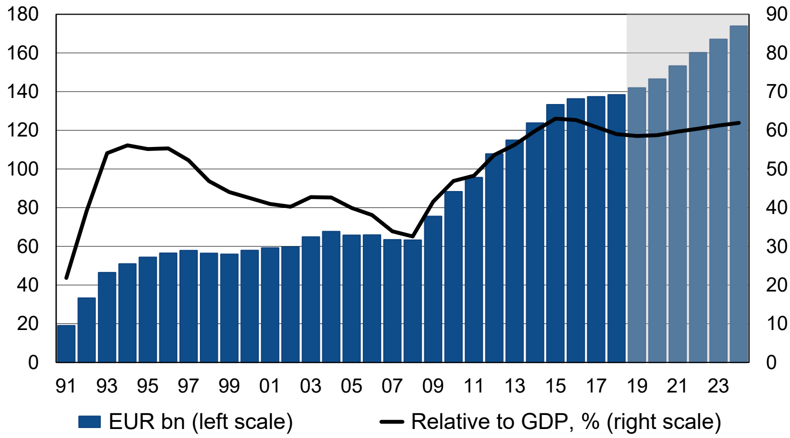
The central government deficit will grow due to frontloaded expenditure increases over the forecast horizon. On the other hand, the budgetary position will be strengthened by more evenly timed tax increases and a reduction in temporary expenditure increases. As the economic cycle stabilises, growth in tax revenues will also slow down. Local government expenditure will continue to grow rapidly over the next few years. The budgetary position of the local government is burdened by the growing need for services due to the ageing of the population and the high level of investments. The combined deficit of the central and local government will reach EUR 5.6 billion by the turn of the next decade.

Employment pension institutions included in social security funds are in surplus. The surplus of employment pension institutions will shrink to just over half a per cent of GDP in the next few years. While pension expenditure is growing rapidly and low interest rates slow down the growth of property income, moderate economic growth will increase pension contribution revenue. Other social security funds show a slight surplus. The unemployment insurance contribution will be reduced at the beginning of 2020. Reducing the contribution will cut the surplus to a level that is almost in balance.

In 2020, Government Programme measures will increase the general government expenditure ratio (expenditure to GDP ratio). In addition, unemployment expenditure will no longer fall as quickly as in previous years. The expenditure ratio will approach 52½% by the end of the forecast period. In 2020, the tax rate (taxes and tax-like payments relative to GDP) will increase as a result of the tax increases required by the Government Programme and the increase in the average municipal tax.



General government debt



Sources: Statistics Finland, MoF

Table 15. General government finance[1)]

	2017	2018	2019**	2020**	2021**	2022**
	EUR billion					
Current taxes	37.2	37.4	38.7	40.4	41.6	43.0
Taxes on production and imports	31.6	33.1	33.4	34.2	35.1	35.8
Social security contributions	27.3	28.0	28.4	29.5	30.3	31.2
Taxes and contributions, total[2]	97.0	99.1	101.3	104.8	107.7	110.8
Other revenue[3]	23.7	24.1	24.7	24.6	24.8	25.4
of which interest receipts	1.7	1.7	1.5	1.4	1.4	1.5
Total revenue	**119.8**	**122.5**	**125.3**	**128.7**	**131.7**	**135.4**
Consumption expenditure	51.5	53.1	55.3	58.0	59.8	61.9
Subsidies	2.7	2.7	2.8	3.0	2.8	2.6
Social security benefits and allowances	42.6	43.1	43.9	45.2	46.4	47.8
Other current transfers	5.2	5.6	5.5	5.7	5.8	5.8
Subsidies and current transfers, total	50.6	51.4	52.3	53.9	55.0	56.2
Capital expenditure[4]	9.6	10.2	10.5	11.0	11.2	11.3
Other expenditure	9.7	9.7	9.6	9.5	9.4	9.5
of which interest expenses	2.2	2.1	1.8	1.5	1.4	1.3
Total expenditure	**121.3**	**124.4**	**127.7**	**132.3**	**135.4**	**138.9**
Net lending (+) / net borrowing (-)	**-1.6**	**-1.9**	**-2.3**	**-3.5**	**-3.7**	**-3.5**
Central government	-4.0	-2.8	-2.2	-3.5	-3.0	-2.6
Local government	-0.5	-2.1	-2.9	-2.3	-2.6	-2.8
Employment pension schemes	2.2	2.2	2.2	1.9	1.6	1.6
Other social security funds	0.7	0.7	0.5	0.3	0.3	0.3
Primary balance[5]	-1.0	-1.5	-2.0	-3.4	-3.7	-3.7

1) As calculated in the National Accounts
2) Incl. capital taxes
3) Incl. capital transfers and consumption of fixed capital
4) Gross fixed capital formation and capital transfers
5) Net lending before net interest expenses

Table 16. **Main economic indicators in general government**

	2017	2018	2019**	2020**	2021**	2022**
	relative to GDP, %					
Taxes and social security contributions	43.0	42.3	41.8	42.0	41.9	41.8
General government expenditure[1]	53.7	53.1	52.7	53.0	52.7	52.4
Net lending	-0.7	-0.8	-1.0	-1.4	-1.4	-1.3
Central government	-1.8	-1.2	-0.9	-1.4	-1.2	-1.0
Local government	-0.2	-0.9	-1.2	-0.9	-1.0	-1.1
Employment pension institutions	1.0	1.0	0.9	0.8	0.6	0.6
Other social security funds	0.3	0.3	0.2	0.1	0.1	0.1
Primary balance[2]	-0.4	-0.7	-0.8	-1.4	-1.4	-1.4
General government debt	60.9	59.0	58.5	58.8	59.7	60.4
Central government debt	46.8	44.8	43.9	43.6	44.0	44.3
General government employment, 1,000 persons	619	632	633	637	637	638
Central government	132	135	136	136	135	134
Local government	476	485	485	489	490	491
Social security funds	12	13	13	13	13	13

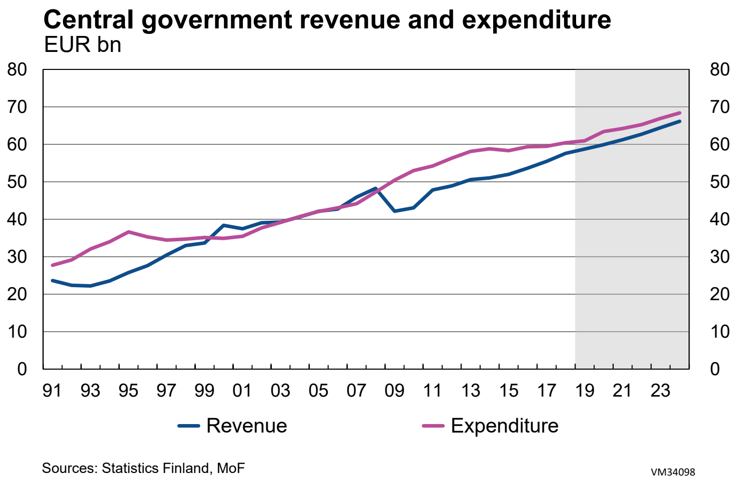
1) EU-harmonized definition
2) Net lending before net intrest expenses

2.2 Central government

The central government deficit has declined in recent years, but it is still considerably high. Cyclical fluctuations are most clearly reflected in the central government financial balance, especially due to the high cyclical sensitivity of tax revenue. On the other hand, the growth of expenditure has been curbed by adjustment measures. In 2019, the central government budgetary position will continue to strengthen, and the deficit will be the lowest since the financial crisis.

The central government deficit will increase in 2020, when the additional spending foreseen in the Government Programme takes effect. Towards the end of the forecast period, the growth of tax bases will slow down, which will be reflected in a slower development of tax revenue. On the other hand, there will also be tax increases that enter into force. The central government deficit will still be high at the end of the forecast period. Central government interest expenditure has declined significantly in recent years and this trend is expected to continue until 2022.

In 2019, central government debt will increase by EUR 1.4 billion to EUR 106.4 billion at the end of the year. The state budget will remain in deficit over the forecast period and central government debt will continue to rise. Central government debt is estimated to be around EUR 117.7 billion in 2022, or about 44.3% of GDP. From 2021 onwards, the appropriations budgeted for the fighter plane project of the Finnish Defence Forces will increase central government debt annually.



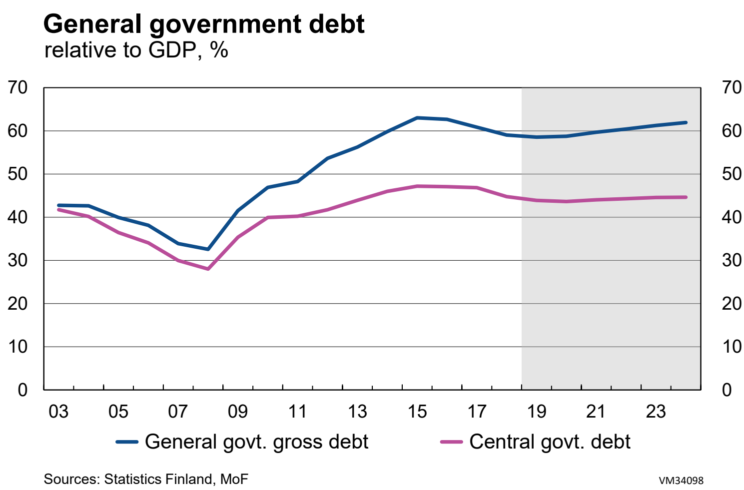


Table 19. Central government[1]

	2017	2018	2019**	2020**	2021**	2022**
	EUR billion					
Current taxes	14.4	14.9	15.4	15.9	16.4	17.0
Taxes on production and imports	31.6	33.1	33.4	34.2	35.1	35.8
Social security contributions	0.0	0.0	0.0	0.0	0.0	0.0
Taxes and social security contributions, total[2]	46.9	48.7	49.6	50.9	52.3	53.6
Other revenue[3]	8.8	9.0	9.1	8.9	8.9	9.0
of which interest receipts	0.3	0.2	0.2	0.2	0.2	0.2
Total revenue	**55.8**	**57.7**	**58.7**	**59.8**	**61.2**	**62.6**
Consumption expenditure	13.6	13.9	14.3	15.1	15.3	15.7
Subsidies and current transfers, total	39.4	40.0	40.5	42.0	42.7	43.5
to general government	28.1	28.2	28.6	29.7	30.4	31.2
Interest expenses	2.1	1.9	1.7	1.4	1.2	1.2
Capital expenditure[4]	4.7	4.7	4.5	4.8	4.9	4.8
Total expenditure	**59.8**	**60.5**	**60.9**	**63.4**	**64.1**	**65.1**
Net lending (+) / net borrowing (-)	**-4.0**	**-2.8**	**-2.2**	**-3.5**	**-3.0**	**-2.6**
Primary balance[5]	-2.2	-1.1	-0.7	-2.3	-2.0	-1.6

1) As calculated in the National Accounts
2) Incl. capital taxes
3) Incl. capital transfers (excl. capital taxes) and consumption of fixed capital
4) Gross fixed capital formation and capital transfers
5) Net lending before net interest expenses

2.3 Local government

The budgetary position of the local government deteriorated by a record 1.6 billion in 2018, the deficit in relation to GDP being 0.9%. The local government deficit will deepen further in 2019. The expenditure will increase due to growing health and social service needs, as well as factors such as the municipal-sector pay rises in spring 2019 and the expiry of the holiday bonus cut under the Competitiveness Pact, the impact of which will be largely visible already in 2019. Investment expenditure will also continue to grow, driven by migration and the age of the building stock. Local government revenue will grow significantly slower than expenditure in 2019.

The local government development projection for 2020-2022 is a pressure calculation that takes into account general economic and demographic trends as well as measures affecting municipal finances already included in budget proposals and the General Government Fiscal Plan. The development projection does not include the measures planned by municipalities and joint municipal authorities for 2021 and 2022. They will only be considered after the budgets have been completed. The income tax rates of municipalities have been kept at the 2020 level. The forecast includes permanent adjustment measures by municipalities and joint municipal authorities in the amount of 100 million in technical terms at the 2020 level.

During the forecast period, local government consumption expenditure will increase due to the growing demand for health and care services as the population ages, as well as the higher cost of individual health care measures due to advances in medical treatment. In addition, local government spending will be boosted by additional government spending on social and health services and education. Permanent expenditure increases in the Government Programme are planned to be frontloaded and will accelerate the growth in consumption, especially in 2020. One-off investments included in the Government Programme will increase municipal spending between 2020 and 2022.

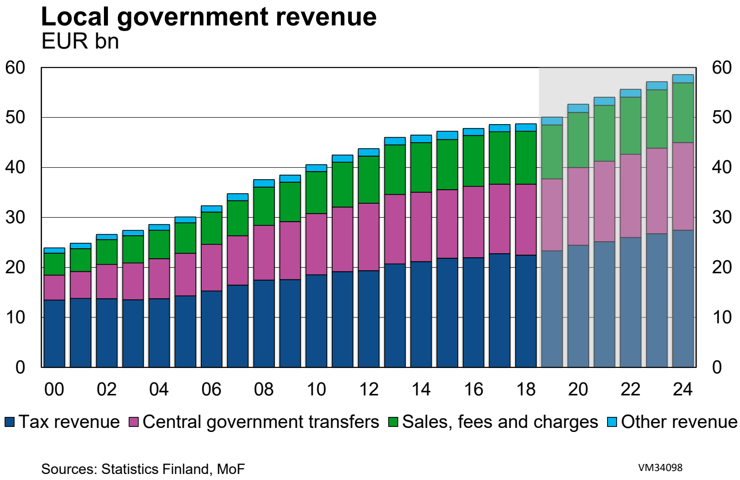
Personnel costs are the largest expense item in the local government, which is why wage settlements in the municipal sector play an important role in the development of local government finances. The municipal sector earnings development is assumed to be in line with the projected annual earnings development of the national economy as a whole. The tension in the labour market is already evident in the municipal sector, evidenced by the occupational barometer of the Ministry of Economic Affairs and Employment of Finland, which indicates a shortage of social and health care professionals in particular. On the other hand, the difficult situation in the municipal economy has increased the number of co-determination negotiations aimed at reducing the workforce.

The level of local government investment will remain high throughout the forecast period, since ongoing construction projects are multi-year and investment pressures will remain significant due to, for example, the age of the building stock and migration. The number of building permits granted for health care and educational buildings has increased, which means that more projects are to be expected. On the other hand, the downturn in the economic cycle and the bleak outlook for municipal finances may delay final investment decisions, as the need to prioritise investments is further emphasised.

The budgetary position of the local government will improve slightly in 2020, compared with the current year but the improvement is only temporary and is partly explained by timing factors. The growth of central government transfers in particular will be most pronounced in 2020. The increase in central government transfers is due to the partial elimination of the cuts laid out in the Competitiveness Pact, the end of the central government transfer index freeze, the increase in tax compensations and the increases under the Government Programme. Although the Government Programme measures increase municipal spending, related central government transfers increase almost as much.

The fastest growth in tax revenue will also occur in 2020. The increase in the average municipal tax from 19.88% to 19.97% will increase tax revenue by almost EUR 100 million at the 2020 level. In 2021 and 2022, the increase in tax revenue will be sustained by earnings growth.

Local government revenue is not sufficient to cover rising costs, in a situation where investments remain high and the need for social and health services continues to grow as the population ages. The local government deficit will deepen as of 2021. The strengthening of local government finances requires increased productivity, structural reforms and measures to strengthen the finances of municipalities and joint municipal authorities.


Local government revenue
EUR bn
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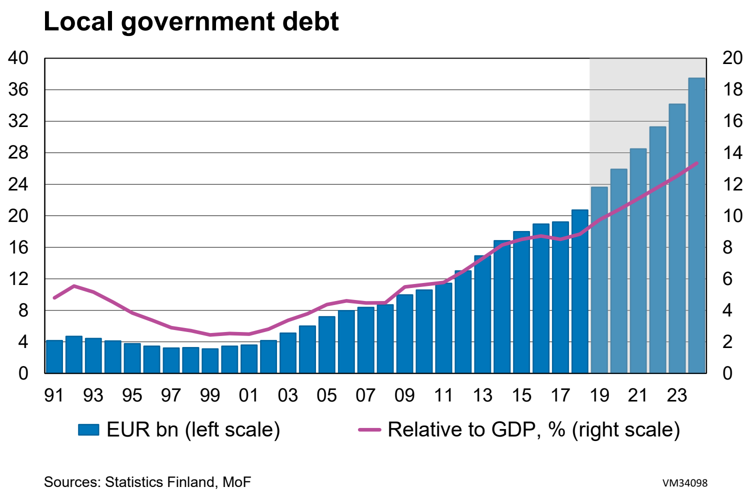
Tax revenue
Central government transfers
Sales, fees and charges
Other revenue
Sources: Statistics Finland, MoF
VM34098


Local government debt
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23
EUR bn (left scale)
Relative to GDP, % (right scale)
Sources: Statistics Finland, MoF
VM34098

Table 25. Local government[1]

	2017	2018	2019**	2020**	2021**	2022**
	EUR billion					
Taxes and social security contributions	22.8	22.5	23.3	24.4	25.2	26.0
of which municipal tax	19.1	18.8	19.5	20.4	21.1	21.8
corporate tax	1.9	1.9	1.9	2.1	2.1	2.2
real estate tax	1.8	1.8	1.9	1.9	1.9	2.0
Other revenue[2]	18.8	19.3	19.7	21.1	21.8	22.5
of which interest receipts	0.3	0.3	0.3	0.3	0.3	0.3
transfers from central government	13.9	14.2	14.4	15.6	16.1	16.7
Total revenue	**41.5**	**41.8**	**43.1**	**45.5**	**46.9**	**48.5**
Consumption expenditure	34.3	35.6	37.2	39.0	40.4	42.1
of which compensation of employees	21.0	21.4	21.9	22.7	23.4	24.1
Income transfers	2.7	2.6	2.6	2.6	2.7	2.8
of which social security benefits and allowances	0.7	0.7	0.7	0.7	0.7	0.8
subsidies and other transfers	1.9	1.8	1.8	1.8	1.8	1.8
interest expenses	0.1	0.1	0.1	0.1	0.1	0.2
Capital expenditure[3]	5.0	5.6	6.1	6.3	6.4	6.5
Total expenditure	**42.0**	**43.8**	**45.9**	**47.8**	**49.5**	**51.3**
Net lending (+) / net borrowing (-)	**-0.5**	**-2.1**	**-2.9**	**-2.3**	**-2.6**	**-2.8**
Primary balance[4]	-0.6	-2.2	-3.1	-2.5	-2.7	-2.9

1) As calculated in National Accounts
2) Incl. capital transfers and consumption of fixed capital
3) Gross capital formation and capital transfers
4) Net lending before net interest expenses

2.4 Social security funds

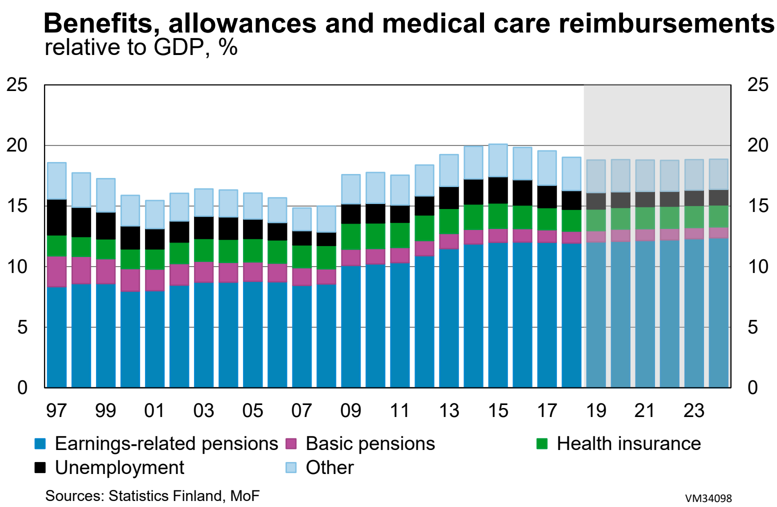
Last year, the surplus of the employment pension institutions was 1.0% in relation to GDP. The surplus of the employment pension institutions has declined significantly over the last decade, as the average surplus was just over 3% in the first decade of the 2000s. The surplus of the employment pension institutions is expected to decline further over the forecast period. The favourable economic cycle has helped to increase the pension contribution revenue, but it will not be enough to substantially improve the financial situation of the employment pension institutions. Property income growth will slow down, and property income will decrease due to very low interest rates before they start to increase again as interest rates rise. The rise in employment pension expenditure will continue as the number of pensioners is increasing and further rises in average pensions are expected. The private-sector pension contribution is expected to remain at its current level (24.4%) throughout the forecast period.

Other social security funds comprise the Social Insurance Institution (Kela), which is mainly responsible for basic social security, as well as the Employment Fund and the unemployment funds, which manage earnings-related unemployment security schemes. The surplus of other social security funds remained at 0.3% of GDP last year. The surplus of other social security funds is expected to gradually decline over the projection horizon. This is because the unemployment insurance contribution was reduced for the current year and will be further reduced in 2020. Next year, expenditure will grow due to increases in benefits decided by the Government. The other social security funds will then remain close to balance, with a slight surplus. i

Table 26. Finances of social security funds[1]

	2017	2018	2019**	2020**	2021**	2022**
	EUR billion					
Investment income	3.9	4.1	4.3	4.1	4.0	4.3
Social security contributions	27.3	27.9	28.4	29.5	30.3	31.2
of which contibutions paid by employers	17.6	17.7	17.6	18.1	18.7	19.2
contributions paid by insured	9.7	10.3	10.8	11.4	11.6	12.0
Transfer from general government	15.8	15.5	15.5	15.5	15.7	15.9
Other revenue	0.4	0.3	0.3	0.3	0.3	0.3
Total revenue	**47.4**	**47.8**	**48.5**	**49.4**	**50.4**	**51.7**
Consumption expenditure	3.5	3.6	3.8	3.9	4.0	4.1
Social security benefits and allowances	37.6	37.9	38.7	39.9	41.0	42.3
Other outlays	3.4	3.3	3.3	3.4	3.4	3.5
Total expenditure	**44.5**	**44.9**	**45.8**	**47.1**	**48.5**	**49.9**
Net lending (+) / net borrowing (-)	**2.9**	**2.9**	**2.8**	**2.3**	**1.9**	**1.9**
Earnings-related pension schemes	2.2	2.2	2.2	1.9	1.6	1.6
Other social security funds	0.7	0.7	0.5	0.3	0.3	0.3
Primary balance[2]	1.9	1.8	1.8	1.4	1.0	0.8

1) As calculated in National Accounts
2) Net lending before net interest expenses



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